

Project Management Credentials Compared 2014 Update

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INTRODUCTION

Since December of 2010, out of frustration trying to make sense of all the credentials proliferating in the field of project and program management, I have been conducting on-going research trying to benchmark the various project and program management credentials against the US Professional Engineer (PE) license as well as Malcolm Gladwell's "10,000 hour" rule.

To set the stage for this update, a "Benchmark" is defined to be "A "best in class" achievement which becomes the reference point or recognized standard of excellence against which similar processes are measured¹" with the objective being "to improve the current practices."² This research is being published not to embarrass any professional organization or their credentials, but to encourage all professional organizations to use this benchmarking research as the basis to "raise the bar" to help professionalize the practice of project management.

Thus, the US Professional Engineer (PE) license was chosen as one of the benchmarks because:³

- ✓ Civil Engineering has been recognized as a "learned profession" for over 160 years (since 1852)
- ✓ Civil Engineering has earned the respect of the consuming public by CONSISTENTLY designing roads, bridges, buildings and other structures which have lasted well beyond their design life while saving lives in the process;
- ✓ Civil Engineering exemplifies the processes associated with project management as those processes are embedded within the profession of Civil Engineering.
- ✓ The PE license requires a well-balanced mix of BOTH education and supervised, peer reviewed experience.

There are two ways to qualify to earn a PE license -

- Graduate from an ABET accredited university and log 10,000 hours of SUPERVISED experience.
- Graduate from a non-ABET accredited university and log 14,000 hours of SUPERVISED experience.

¹ Merriam Webster Dictionary definition of Benchmark, restated <http://www.merriam-webster.com/dictionary/benchmark>

² Stroud, J. Delayne (2010) "Understand the Purpose and Uses of Benchmarking"
<http://www.isixsigma.com/methodology/benchmarking/understanding-purpose-and-use-benchmarking/>

³ For more on the Professional Engineer license, look here- <http://www.asce.org/> and <http://www.engr.ncsu.edu/academics/undergrad/profengr/>

Malcolm Gladwell's "10,000 Hour" rule came from his 2008 book "Outliers - The Story of Success" where he posited that to become "successful" at anything, required a minimum of 10,000 hours of progressively challenging experience. And while his research has been challenged, the primary reason for choosing this as a benchmark is by providing a true zero point and having the same unit of measure, it enabled the creation of a ratio scale analysis. So while the "10,000 hour" rule has been used as a benchmark, this research makes a reasonable argument that the number should be closer to 15,000 hours not 10,000, at least for project management.

To recap the history, the initial 2010 study consisted of those credentials from PMI, IPMA, AIPM, AACE, INCOSE and AXELOS. (Reference PM World Journal Volume 2, Issue 1 January 2013, Second Edition <http://goo.gl/trQHcj>).

In the February 2013 issue of PM World Journal, <http://goo.gl/ElkyA>, I published an UPDATE which expanded the research to include the Green Project Management (GPM) organizations credentials; the ASEM (American Society for Engineering Management) certifications and the FAI (US Federal Acquisition Institute) credentials. That update also added PMI's agile credential and AACE's Decision and Risk Management credential. In the 2013 update, I also refined the scoring model to address several anomalies in the rankings. (See the previous editions for details on these refinements)

Based on requests from various followers of this topic in the *PM World Journal*, this 2014 update has been further EXPANDED to include the following credentials:

International Institute of Business Analysts (IIBA) <http://www.iiba.org/About-IIBA.aspx>
Certification of Competency in Business Analysis (CCBA)
Certified Business Analysis Profession (CBAP)

AXCELOS/IT Service Management (ITSM/ITIL) <http://www.itil-officialsite.com/>
ITIL Foundation
ITIL Expert
ITIL Master

Green Project Management Organization <http://www.greenprojectmanagement.org/>
Green Project Manager Master Level w/BA/BS
Green Project Manager Master Level w/MS/MBA
Green Project Manager Master Level w/PhD

Worth noting is the Green Project Management organization is the first to OFFICIALLY recognize advanced degrees (Masters and PhD) as an INTEGRAL part of their certification process. This is consistent with the decision that starting in 2020, the US Professional Engineer (PE) license is also going to start requiring a Master's degree or better. For those professional organizations who follow this research, and have been using it as the basis to create or expand on their credentials, the fact that advanced degrees are starting to be given formal recognition as a part of the credentialing process is an encouraging sign that the bar is being raised in terms of "professionalizing" the practice of project and program management.

All told, there are now a total of 40 different certifications being benchmarked against both the PE license and against Gladwell’s “10,000 hour” rule:

<p>AACE- http://goo.gl/v7twae</p> <p>1) CFCC 2) CCC/CCE (CCP) 3) CEP 4) DRMP 5) EVP 6) PSP 7) CCT</p>	<p>IPMA- http://goo.gl/Knd98</p> <p>20) GPM-B 21) GPM GPM-M 22) W/Bachelor 23) W/Masters 24) W/PhD</p>	<p>US Government Federal Acquisition Institute- http://goo.gl/fl5ztp</p> <p>38) FAI P/PM ENTRY 39) FAI P/PM MID 40) FAI P/PM SENIOR</p>
<p>AXELOS- http://www.axelos.com/About-Us/</p> <p>8) ITIL Foundation 9) ITIL Expert 10) ITIL Master PRINCE2- 11) Foundation 12) Practitioner</p>	<p>AIPM- http://goo.gl/vUAF64</p> <p>25) CCPD 26) CCPM 27) CCM</p>	
<p>ASEM- http://goo.gl/vOLG9z</p> <p>13) PEM 14) AEM</p>	<p>asapm- http://goo.gl/oX9zI7</p> <p>28) Level D 29) Level C 30) Level B 31) Level A</p>	
<p>IIBA- http://goo.gl/RKgmLL</p> <p>15) CCBA 16) CBAP</p>	<p>PMI- http://goo.gl/e1bfs</p> <p>32) CAPM 33) PMP 34) PMI-Schedule 35) PMI-Risk 36) PMI-Agile 37) PgMP</p>	
<p>INCOSE- http://goo.gl/x5BE9</p> <p>17) CSEP 18) ESEP 19) MSEP</p>		

Illustration 1- Alphabetical listing of each organization and their certifications included in the study.

IPMA leads the way with 12 credentials from their member and/or affiliated organizations, followed by AACE with 7, PMI with 6 and AXELOS with 5.

Interesting to note that consistent with the objective of this research to serve as a baseline or guide for those wanting to create new credentials or update old ones, several organizations including the Association for Engineering Managers (ASEM), Green Project Management organization (GPM) and the US Government’s Federal Acquisition Institute (FAI) have been using this research as the basis to help them design and/or upgrade their certifications.

The fact that the sample size is so diverse in terms of countries being represented has proven to be very interesting, especially when we start to compare the relative standing of each credential against the two benchmarks. Also encouraging are those practitioners coming forward asking their credentials or those from organizations they belong to be included in the analysis.

CHANGES IN THE MODEL 2012 to 2014

Although there have been over 13,000 downloads of either the narrative or the Excel spreadsheet, (see <http://www.build-project-management-competency.com/download-page/> line items #13, #14, #23 and #24) this year has not generated any challenges to either the methodology or the calculations and despite having contacted all the major professional organizations inviting their inputs, only a handful have formally reviewed the spreadsheet and made any corrections to the data used as the basis to create this scoring model.

Because the Green Project Management organization is now recognizing those having a PhD as an integral part of their Master Green Project Manager credential, the scoring model had to be expanded to include the level of effort required to obtain a PhD. (The value of a Master's degree was included in the original, 2010 version)

For those new to this research, the scoring model is based on the concept of “earned hours” and reflects the total “beginning to end” level of effort required to pre-qualify for, prepare for, test and/or be assessed necessary to earn each credential. The underlying philosophy was that the more rigorous the requirements, the more likely the credential actually measured not only competency but the commitment of the individual to keep the credential once it was earned. Explained another way, the more work required to earn a credential was one way to eliminate the “accidental” project managers from those who see project management as a full time, career path objective- their profession or calling.

To recap the ORIGINAL scoring model developed in 2010 analyzed the following variables:

Total Hours of Work Experience for a person WITH a 4 year degree	= WEXP ⁴
Standardized Value of a 4 year Degree	= BDEG ⁵
Standardized Value of a Master's Degree	= MDEG ⁶
Additional REQUIRED Training Hours	= ARTH ⁷
Total Level of Effort to prepare for and take the exams	= EXAM ⁸

⁴ This value was taken from the published requirements on the various certification websites and/or downloadable .pdf files.

⁵ For the purposes of this experiment, the assumptions used in calculating BDEG were:

- 1) The average project management undergrad degree required 130 credit hours for graduation;
- 2) That for each 3 credit hours, 40 hours of class time was required;
- 3) That for each 40 hours of class time, 2 hours of homework, research, writing or outside work was required by the student.

⁶ For the purposes of this experiment, the assumptions used in calculating MDEG were:

- 1) The average project management graduate degree required 36 credit hours for graduation;
- 2) That for each 3 credit hours, 40 hours of class time was required;
- 3) That for each 40 hours of class time, 3 hours of homework, research, writing or outside work was required by the student.

⁷ As only PMI REQUIRES training prior to taking the PMP exam and because that training can be fulfilled by simply studying books of sample questions or listening to a podcast, I did not count it as being equal to academic course work and counted the hours only, with no outside or additional effort. (See exam prep effort below)

Total Level of Effort required to prepare for and be assessed	$\equiv \frac{ATCA}{9}$
Total Level of Effort and Degree Requirements Professional Score	$= PSCOR$

Thus the $WEXP + BDEG + MDEG + ARTH + EXAM + ATCA = PSCOR$, where the PSCOR is equal to the cumulative “level of effort” for each of the variables.

In 2012, based on inputs from interested reviewers, we added a total of five new “bonus” or “premium” hour categories, which resulted in a much more accurate and refined measure of the overall rigor of the credential:

- 1) To account for the relative difficulty of the type of questions, we are adding the following to the EXAM score from the original model:
 - a. ADD 05% for Fill in the blank (short phrases <15 words) or Matching type questions $= DIF1$
 - b. ADD 10% for Compound (Case Study Analysis) questions or short essay questions $= DIF2$
 - c. ADD 15% for open ended (long essay) questions >250 words $= DIF3$

- 2) To give credit for those credentials requiring a publishable quality paper, (Minimum of 2500 words) as part of the assessment process, we have added 50 hours to the entire scoring model $= PAPR$

- 3) To account for the importance of formal mentoring to the development of competent, capable professionals, we have ADDED 100 Level of Effort hours to those credentials which INCLUDE a formal (signed off) mentoring program $= SUPRV1$

- 4) To account for those credentials requiring an ASSESSMENT by certified or qualified ASSESSORS, we have added 50% to the original ATCA score $= SUPRV2$

Now in the 2014 update, we have added the “level of effort” required to obtain a PhD degree, which has been calculated based on typical PhD degrees in project, program and construction project management to be 5,160 hours. Thus the value for the **PDEG = 5160 LEVEL OF EFFORT HOURS**.

To summarize, the original 2010 scoring model was $WEXP + BDEG + MDEG + ARTH + EXAM + ATCA = PSCOR$.

⁸ Based on inputs received from several sources and based on first-hand experience, I assumed 30 hours of preparation for each hour of exam. For the PMP only, I deducted the required 35 hours from the total. $(4 \times 30 = 120 - 35 = 85)$

⁹ To calculate the value to prepare for and be assessed, includes the actual assessment time plus an estimated value for the applicant to prepare the evidence for review by the assessors.

In 2012, this scoring model was refined and improved by adding the above modifications to the original resulting in the formula for the revised model being $WEXP + BDEG + MDEG + ARTH + EXAM + (DIF1 + DIF2 + DIF3) + PAPR + ATCA + SUPRV1 + SUPRV2 = PSCOR$.

For this 2014 version, the revised scoring model is $WEXP + BDEG + MDEG + PDEG + ARTH + EXAM + (DIF1 + DIF2 + DIF3) + PAPR + ATCA + SUPRV1 + SUPRV2 = PSCOR$.

This ONLY impacts those credentials which now incorporate the value of either or both the Masters and PhD into their credentialing process, which means only the Master Green Project Manager credentials at least for now. However, it is anticipated others will follow in the coming years, including the Professional Engineer license, starting in 2020.

DISCLAIMER- THE DATA ANALYZED IN THIS RESEARCH WAS GLEANED FROM INFORMATION PUBLICLY AVAILABLE ON THE RELEVANT WEBSITES AND/OR WAS PROVIDED BY INTERESTED INDIVIDUALS. IF THERE ARE ANY ERRORS OR OMISSIONS, THE AUTHOR WILL BE HAPPY TO MAKE WHATEVER CORRECTIONS ARE NECESSARY, UPON RECEIPT OF WRITTEN PROOF FROM AN AUTHORIZED INDIVIDUAL FROM EACH ORGANIZATION SHOWING WHERE THE INPUT DATA IS INCORRECT.

There are many instances where the data is not clear, is contradictory or is only available buried deep in the various documents. One of the on-going suggestions from this research is to urge the member/owners of these organizations to publish an FAQ page which clearly states the total level of effort required to obtain their credentials. I have made the Excel spreadsheet available¹⁰ for anyone to download and update if you find information which is incorrect. My only request is you cite the reference where you obtained your updated information so I can validate your changes and incorporate them into future versions of this research.

I also encourage others to download the Excel spreadsheet, which is made available to anyone under Creative Commons License BY, NC, SA <http://creativecommons.org/licenses/by-nc-sa/4.0/> and add in any other credentials you would like to see compared. Again, my only request is you cite your sources of the data so I can validate what you have done.

¹⁰ The complete Excel spreadsheet can be downloaded from <http://www.build-project-management-competency.com/download-page/> Line item #27

ANALYSIS OF THE DATA

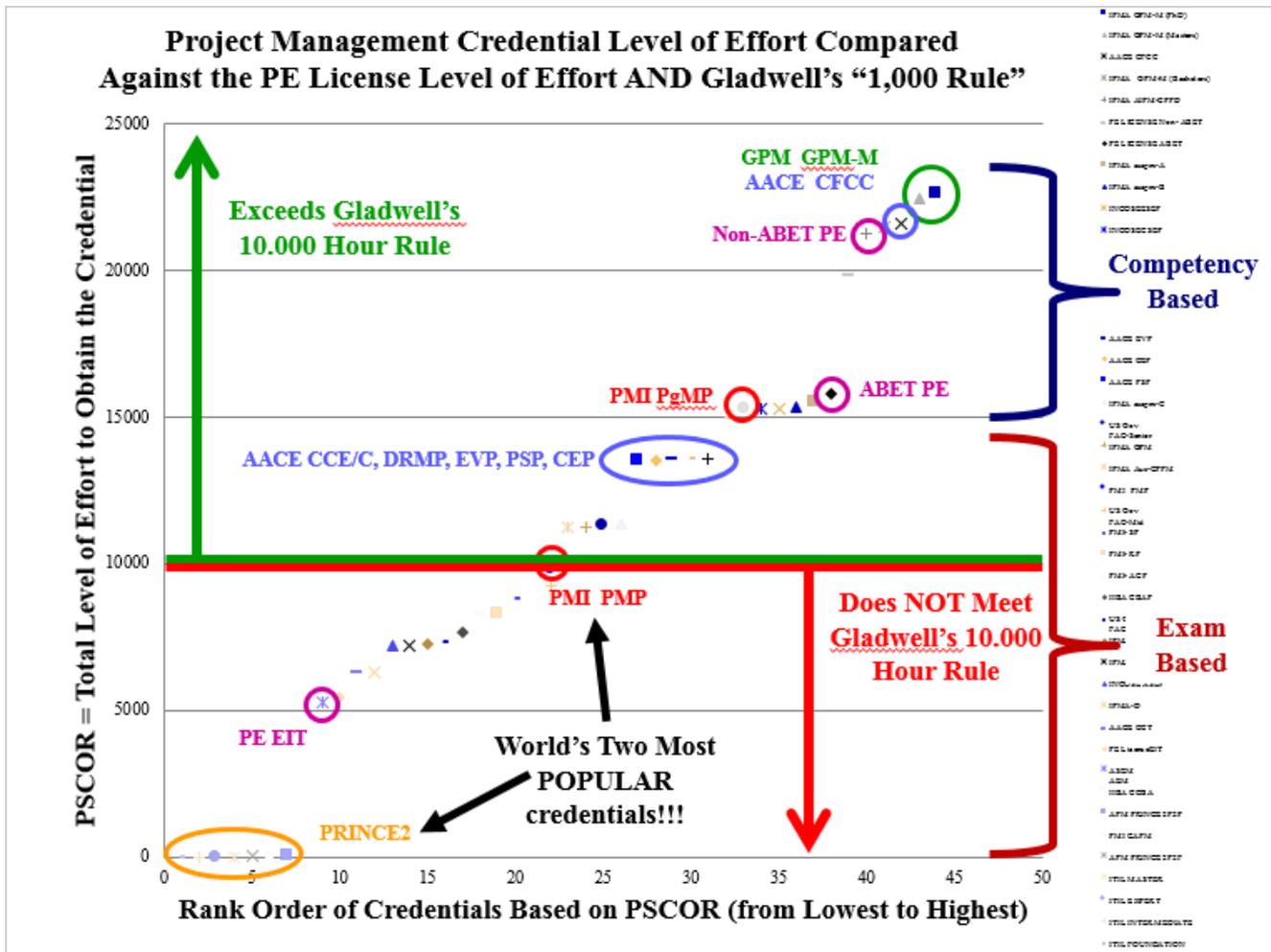


Illustration 1-Graph showing the rank order of the various credentials from lowest to highest¹¹

This illustration shows the rank ordering of all the 40 credentials included in this survey, benchmarked against both the US Professional Engineering (PE) License process and Gladwell’s 10,000 hour rule.

The benchmarking starts with the Engineer In Training (PE EIT) which requires a 4 year degree PLUS passing an exam. This is the entry level credential required to begin the process of becoming a professional engineer (PE)

Moving up the graph, we see the red and green line, establishing a baseline separating those credentials which exceed Gladwell’s 10,000 hour rule and those which don’t. Continuing up, we

¹¹ The complete Excel spreadsheet can be downloaded from <http://www.build-project-management-competency.com/download-page/> Line item #27

see the two remaining benchmarks, the ABET PE for those graduating from an ABET accredited universities and the non-ABET PE for those holding degrees coming universities which are NOT ABET accredited. The reason the non-ABET PE's rank higher is because applicants coming from non-ABET accredited universities are generally required to document more work experience and as this model clearly favours experience over degrees or exams, the non-ABET PE ranks higher than the ABET by about 25%. ($PSCOR\ 19830/15830 = 1.253$) As Gladwell has provided us with a true zero point, it is possible to make a valid relative comparison between any two credentials.

Worth highlighting is the fact that the world's two most POPULAR credentials, PMI's PMP and AXELOS's PRINCE2 both score below Gladwell's 10,000 hour rule. This is or should be a concern to those who are serious about project and program management as a career path objective, for in some industrial sectors and even in some countries, these two credentials have become defacto "licenses to practice" - that is, you cannot get a job unless you hold one of these certifications.

Other aspects worth pointing out is the demarcation point between exam based credentials and competency based credentials (those requiring validated work experience by trained assessors) seems to be close to a PSCOR of 15,000. This provides at least some anecdotal support for those who are challenging Gladwell's "10,000 hour rule" saying it is too low.

This clear demarcation line between the exam based credentials and the competency based credentials results in the AACE family of credentials standing out as the highest ranked of the exam based credentials, while PMI's PgMP (and presumably the new PfMP?) are ranked as the beginning of the COMPETENCY based credentials. It is interesting to see that the only one of PMI's credentials which exceeds the 10,000 hour rule AND scores very favourably against the benchmark ABET PE is their PgMP. Let's hope PMI continues to raise the bar for their PfMP and their other credentials as well.

I will explore this in greater detail a bit later on, but at the top of the scale, the newest GPM credentials, the GPM Master Green Project Manager (with a PhD) and Master Green Project Manager (with a Master's degree) have replaced AACE's Certified Forensic Claims Consultant (CFCC) as the world's most prestigious and exclusive credentials. This pushes the Australian Institute of Project Managers Reg PM CPPE down to 4th place, but still higher than both the ABET and non-ABET PE.

For a more detailed look at how the individual credentials compare against one another, I have broken the Excel spreadsheet down into 4 categories:

- 1) Those credentials whose PSCOR EXCEEDs the ABET and non-ABET PE license
- 2) Those credentials whose PSCOR ranking is HIGHER than Gladwell's 10,000 hour rule but BELOW the ABET PE license
- 3) Those credentials whose PSCOR ranking puts them HIGHER than the PE Engineer In Training (EIT) but BELOW Gladwell's 10,000 hour rule and
- 4) Those credentials whose PSCOR ranking places them below the EIT

Once again, this is not intended to embarrass any organization or to denigrate anyone’s credentials. All this does is look at all the major credentials on the same basis and then benchmark them, with the stated intent to use this benchmarking research as the means to help ALL professional organizations upgrade their existing credentials and/or create new credentials which are more closely aligned with existing accepted and recognized “best in class” professional credentialing programs.

It is also intended to serve as a baseline reference to help individuals determine which credential(s) they feel are appropriate, given their career path objectives as well as to help companies or government agencies determine which credentials are appropriate for consideration in hiring.

CREDENTIALS WHICH EXCEED THE ABET AND NON ABET PE BENCHMARKS

	A	B	C	D	E	F	G	H	I
1	Rank Order from High to Low based on PSCOR	43	42	41	40	39	38	37	36
2	Organizational Affiliation: Acronym of Credential:	GPM-M (PhD)	GPM-M (MS/MBA)	AACE CFCC	GPM-M (BS/BA)	AIPM- CPPE	PE LICENSE Non- ABET	PE LICENSE ABET	IPMA A
3	Required Experience Hours AFTER Bachelors	10000	15000	16000	16000	16000	14000	10000	10000
6	BDEG Level of Effort	5200	5200	5200	5200	5200	5200	5200	5200
8	Standardized Value of MDEG	480	480	0	0	0	0	0	0
10	MDEG Level of Effort	1920	1920	0	0	0	0	0	0
14	PDEG Level of Effort	5160	0	0	0	0	0	0	0
16	ARTH Level of Effort	160	160	0	160	0	24	24	0
19	Level of Effort To Prepare for Exam	90	60	240	30	0	480	480	0
20	EXAM Level of Effort	93	62	248	31	0	496	496	0
21	DIF1 Level of Effort	0	0	0	0	0	0	0	0
22	DIF2 Level of Effort	0	0	24	0	0	0	0	0
23	DIF3 Level of Effort	0	0	36	0	0	0	0	0
25	PAPR Level of Effort	50	50	50	50	0	0	0	50
27	SUPRV1 Level of Effort	4	4	4	4	3	10	10	16
28	SUPRV2 Level of Effort	4	4	22	4	16.5	0	0	88
29	ACTA Level of Effort	40	40	40	40	30	100	100	160
30	TOTAL CUMULATIVE LEVEL OF EFFORT BEYOND DEGREES	14604	4222	672	320	50	1126	1126	314
31									
32	TOTAL PSCOR SCORE	22631	22440	21624	21489	21250	19830	15830	15514
33	RATIO TO ABET PE LICENSE	143%	142%	137%	136%	134%	125%	100%	98%
34	RATIO AGAINST GLADWELL	226%	224%	216%	215%	212%	198%	158%	155%
35									

Illustration 2- Top Ranked Credentials Scored by Total Level of Effort¹²

Of the 5 credentials which EXCEED the Benchmark PE license, 4 of the 5 are directly or indirectly affiliated with IPMA.¹³

¹² The complete Excel spreadsheet can be downloaded from <http://www.build-project-management-competency.com/download-page/> Line Item #27

- #1- Master Green Project Manager (GPM-M) with a PhD degree
- #2- Master Green Project Manager (GPM-M) with a Master's degree
- #4- Master Green Project Manager (GPM-M) with a Bachelor's degree
- #5- Australian Institute of Project Manager's (AIPM) Certified Practicing Portfolio Executive (CPPE)

The only credential to exceed the US PE benchmark which is not directly or indirectly affiliated with IPMA is the Association for the Advancement of Cost Engineers International's (AAACEi) Certified Forensic Claims Consultants (CFCC) which ranks in #3 spot, between the GPM-M with a Master's degree and the GPM-M with a Bachelor's degree.

But from the perspective of prestige and credibility, what is really worth looking at are line items (Rows) 33 and 34 in the Excel spreadsheet. Because Gladwell has provided us with a true zero point and because all the units of measure are equal, (level of effort hours) we have a ratio scale, meaning we can now measure just how much more or less difficult one credential is compared to either the benchmarks or against each other.

So in Illustration 2, we can see from Row 33 that the top ranked Master Green Project Manager (for a person who holds his/her PhD) requires 43% more effort to obtain than an ABET PE license. ($PSCOR\ 22631/PSCOR\ 15830 = 143\%$). And if we look at Row 34 when benchmarked against Gladwell's "10,000 hour" rule, we find that the Master Green Project Manager (holding a PhD) scores 226% or 2.26 times the level of effort established by Gladwell. ($PSCOR\ 22631/10000 = 226\%$)

The reason this becomes relevant is because there have been some researchers questioning whether Gladwell's 10,000 hour rule is wrong, and based on the fact that the demarcation line between the exam based credentials and the competency based credentials is close to 15,000 hours, certainly lends some credibility to the argument that in fact, Gladwell's baseline is too low by close to half. The challenges to Gladwell are being followed and if he does make any revisions, they will be included in future updates, but in the meantime, this would make a great topic for further research for interested PhD candidates.

¹³ Green Project Management's certification training course gained acceptance into the IPMA Registration System in 2013

CREDENTIALS WHICH EXCEED GLADWELL BUT SCORE LOWER THAN THE ABET PE

	A	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	
Rank Order from High to Low based on PSCOR	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21		
Organizational Affiliation:	PE	IPMA A	IPMA B	INCOSE	INCOSE	ASEM	PMI	AACE	AACE	AACE	AACE	AACE	IPMA	US Gov	GPM	AIPM	AXELOS	PI	
Acronym of Credential:	LICENSE			ESEP	CSEP	PEM	PgMP	CCC/	DRMP	EVP	CEP	PSP	C	FAC-		CPPD	ITIL	PI	
	ABET							(CCP)						Senior			MASTER		
Required Experience Hours AFTER Bachelors	10000	10000	10000	10000	10000	10000	9750	8000	8000	8000	8000	8000	6000	6000	6000	6000	10000	4	
BDEG Level of Effort	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	0	5
Standardized Value of MDEG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
MDEG Level of Effort	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
PDEG Level of Effort	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
ARITH Level of Effort	24	0	0	0	0	0	0	0	0	0	0	0	0	0	113	0	0	0	5
Level of Effort To Prepare for Exam	480	0	0	60	60	65	100	250	280	280	280	280	60	0	0	0	0	85	5
EXAM Level of Effort	496	0	0	62	62	69	104	255	285	285	285	285	62	0	0	0	0	89	5
DF1 Level of Effort	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
DF2 Level of Effort	0	0	0	0	0	0	0	25	28	28	28	28	0	0	0	0	0	0	5
DF3 Level of Effort	0	0	0	0	0	0	0	38	42	42	42	42	0	0	0	0	0	0	5
PAPR Level of Effort	0	50	50	0	0	0	0	50	0	0	0	0	50	0	0	0	0	0	5
SUPRV1 Level of Effort	10	16	5	4	3	0	0	4	1.5	0.75	0.5	0.5	4	0	3	3	0	0	5
SUPRV2 Level of Effort	0	88	27.5	0	0	0	-100	0	0	0	0	0	0	0	16.5	0	0	0	5
ACTA Level of Effort	100	160	50	40	30	0	0	40	15	7.5	5	5	40	0	30	30	0	0	5
TOTAL CUMULATIVE LEVEL OF EFFORT BEYOND DEGREES	1126	314	133	168	157	178	108	667	657	648	646	646	218	112	50	33	178	1	5
TOTAL PSCOR SCORE	15830	15514	15333	15306	15295	15289	14954	13612	13572	13563	13561	13561	11356	11312	11250	11233	10089	9	5
RATIO TO ABET PE LICENSE	100%	98%	97%	97%	97%	97%	94%	86%	86%	86%	86%	86%	72%	71%	71%	71%	64%	6	5
RATIO AGAINST GLADWELL	158%	155%	153%	153%	153%	153%	150%	136%	136%	136%	136%	136%	114%	113%	112%	112%	101%	8	5

Illustration 3 - Credentials Which Exceed Gladwell but Score Lower than the ABET PE

This portion of the Excel scoring spreadsheet covers those credentials which it can be argued are legitimate professional level credentials, as they exceed Gladwell’s “10,000 hour” rule, yet still fall short of the ABET PE PSCOR of 15,830 hours.

Some of the interesting observations from this portion of the spreadsheet is that first and foremost, this contains the demarcation line (see pink vertical reference) between the most challenging of the exam based credentials, Association for the Advancement of Cost Engineering International’s Certified Cost Consultant/Cost Engineer (now Certified Cost Professional), their Earned Value Professional (EVP); Cost Estimating Professional (CEP); Planning and Scheduling Professional (PSP) and Decision and Risk Management Profession (DRMP) with a PSCOR of 13612 and the lowest of the competency based credentials, PMI’s Program Management Professional (PgMP) credential, with a PSCOR of 14954. As noted previously, this raises the question whether or not at least in the world of project management, whether Gladwell’s 10,000 hour rule is low? That it should be 15,000? Certainly a question worth asking and researching further. This argument becomes even more compelling when we look at Row 33 and see that from the PgMP up, the INCOSE, asapm and ASEM credentials all have a PSCOR within only a few percentage points lower than of the ABET PE.

Several other interesting observations we can discuss from this section is a comparison between the IPMA C, with a PSCOR of 11356, PMI’s PMP with a PSCOR of 9854 (not visible on this graphic) and the IPMA/asapm Level D, with a PSCOR of 6332 (also not visible on this graphic)

Once again as we have a ratio scale, we can use this to help answer a long standing debate in the project management community and that is, exactly where should the PMP be ranked when compared against the competing IPMA C and D level. Given the C Level's PSCOR = 11356, the PMP PSCOR = 9854 and D Level PSCOR= 6335, we can readily calculate that the PMP is roughly 67% of the way between the IPMA D and IPMA C or stated another way, the IPMA C is about 1/3 more effort to earn than the PMP and the PMP is about 2/3 more effort than the IPMA D

One final observation is that the AXELO's ITIL Master Level is the only credential coming from this organization which meets or exceeds Gladwell's 10,000 hour rule as it is the only AXELO credential which requires a minimum of experience. This issue will be explored in more detail when we look at the ranking of the PRINCE2 and other ITIL credentials

CREDENTIALS WHICH EXCEED THE EIT BUT SCORE LOWER THAN GLADWELL

	A	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL
1	Rank Order from High to Low based on PSCOR	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7
	Organizational Affiliation:	AXELOS	PMI-	US Gov	PMI-	PMI-	PMI-	IBA	US Gov	GPM-b	AIPM-	INCOSE	IPMA D	AACE	PE	ASEM
	Acronym of Credential:	ITIL	PMP	FAC-Mid	SP	RP	ACP	CBAP	FAC-		CPPM	ASEP		CCT	License	AEM
		MASTER							Entry						EIT	
2	Required Experience Hours AFTER Bachelors	10000	4500	4000	3500	3000	3000	7500	2000	2000	2000	2000	1000	1000	0	0
6	BDEG Level of Effort	0	5200	5200	5200	5200	5200	0	5200	5200	5200	5200	5200	5200	5200	5200
8	Standardized Value of MDEG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	MDEG Level of Effort	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	PDEG Level of Effort	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	ARTH Level of Effort	0	35	80	0	0	0	0	112	0	0	0	0	0	0	0
19	Level of Effort To Prepare for Exam	85	85	0	105	105	105	105	0	90	0	0	127.5	105	240	60
20	EXAM Level of Effort	89	89	0	108.5	108.5	108.5	108.5	0	93	0	0	131.75	108.5	248	62
21	DIF1 Level of Effort	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	DIF2 Level of Effort	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	DIF3 Level of Effort	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	PAPR Level of Effort	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	SUPRV1 Level of Effort	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0
28	SUPRV2 Level of Effort	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	ACTA Level of Effort	0	0	0	0	0	0	40	0	0	0	0	0	0	0	0
30	TOTAL CUMULATIVE LEVEL OF EFFORT BEYOND DEGREES	178	213	80	217	217	217	261	112	186	0	0	264	217	496	124
31																
32	TOTAL PSCOR SCORE	10089	9824	9280	8809	8309	8309	7653	7812	7295	7200	7200	6332	6309	5448	5182
33	RATIO TO ABET PE LICENSE	64%	62%	59%	56%	52%	52%	46%	46%	46%	45%	45%	40%	40%	34%	33%
34	RATIO AGAINST GLADWELL	101%	98%	93%	88%	83%	83%	77%	73%	73%	72%	72%	63%	63%	54%	53%

Illustration 4- Credentials Scoring HIGHER than the PE EIT but LOWER than Gladwell's 10,000 Hours

This category includes what most practitioners would consider to be entry level credentials. These credentials are for people who have some experience (not just fresh graduates) and are the credentials what one would expect to see for people who are transitioning from functional or technical staff positions into project or program teams and at the higher levels to manage simple or non-complex projects. To equate this to the trades, this would encompass apprenticeship. In professional practice, this would be an internship or residency requirement. Individuals holding these credentials would hold a 4 year degree and between 1-4 years of progressively more

challenging experience and normally be working under the mentorship of a master level practitioner. At the upper end of the scale, people with these qualifications might be found managing small or non-complex projects. Projects with a CIFTER Score¹⁴ of less than 11.

Note that the globally popular PMP falls into the upper end of this category. This is or should be of considerable concern as in some industry sectors and even in some countries, the PMP has become a defacto license to practice- that is, people cannot get a job in project management unless they hold the PMP. Employers and more specifically HR professionals need to be aware of the relative standing of the PMP vis-a-vis other credentials and take this relative standing into consideration when determining what criteria to consider using to determine who to hire for any given project. Explained another way, while all of these credentials have meaning, it is highly questionable whether it is appropriate that this level of credential should be used as the FIRST filter in determining who to interview. Perhaps as a tie breaker between two otherwise equally qualified job candidates but to use such a relatively low credential as the primary filter is eliminating many potentially better qualified candidates from consideration.

Also worth noting is the rest of the PMI family of credentials- the PMI-Risk, PMI- Schedule and Agile Project Manager also fall into this same range. Given the relative popularity of the PMI credentials, I am hoping this benchmarking research will result in a more rational and realistic understanding of exactly what any of these credentialing processes does and does not validate. Even better, I think it only reasonable to expect that any professional organization which offers a credential should have the moral if not legal obligation under various consumer protection laws to disclose what their credentials do and do NOT validate.

For practitioners and those who use our services should also be aware that popularity does not necessarily translate into credibility nor do any of these credentials guaranty favourable results, either for the project or whatever product, service or outcome the project was undertaken to create or achieve. However, “common sense” should tell us that the more robust the credentialing process, the more likely it is to weed out the incompetent, incapable or just plain careless. But as we know from the high numbers of medical malpractice actions, no credential can guaranty that the holder of that credential won’t have a bad day and mess up, no matter how robust the process.

One of the recommendations coming from this research is the importance of some credible, independent research that links having ANY of these credentials to better PROJECT success and/or better PRODUCT (what the project was designed to accomplish) success.

Although I could not find any published research papers on the topic specifically, the PE license has overall resulted in far fewer engineering disasters, such as “Galoping Gertie” (Tacoma Narrows Bridge Collapse¹⁵) or the 1981 Hyatt Regency Kansas City Bridge Collapse¹⁶.

¹⁴ CIFTER Score- To learn about how to use the CIFTER Score to calculate project complexity, go HERE: http://www.globalpmstandards.org/attachments/GAPPS_Project_Manager_v1.1150411_A4.pdf

¹⁵ “Galopin Gertie” Tacoma Narrows Bridge Collapse <http://www.youtube.com/watch?v=j-zczJXSxw>

¹⁶ Hyatt Hotel Bridge Collapse <http://www.youtube.com/watch?v=czmQS81k9eM>

Beyond the scope of this paper, but important for both researchers and practitioners to consider, is the key to the relatively good safety record in civil engineering (and aircraft piloting), when compared against the rather abysmal track record of both project and product success, comes from having LEGAL accountability. Glenn Butts in his highly critical analysis of project failures in NASA¹⁷ has captured the essence of the role that accountability plays in improving the “success” of both projects and the products or results they produce.¹⁸

CREDENTIALS WHOSE PSCOR RANKS THEM LOWER THAN THE EIT

	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
1 Rank Order from High to Low based on PSCOR	9	8	7	6	5	4	3	2	1
Organizational Affiliation:	AACE	PE	ASEM	IIBA	AXELO	AXELOS	AXELOS	PMI	AXELOS
Acronym of Credential:	CCT	License EIT	AEM	CCBA	S ITIL XPERT	PRINCE2 P2P	ITIL FOUND.	CAPM	PRINCE2 P2F
2 Required Experience Hours AFTER Bachelors	1000	0	0	3750	0	0	0	0	0
6 BDEG Level of Effort	5200	5200	5200	0	0	0	0	0	0
8 Standardized Value of MDEG	0	0	0	0	0	0	0	0	0
10 MDEG Level of Effort	0	0	0	0	0	0	0	0	0
14 PDEG Level of Effort	0	0	0	0	0	0	0	0	0
16 ARTH Level of Effort	0	0	0	0	0	0	24	0	0
19 Level of Effort To Prepare for Exam	105	240	60	105	180	75	30	45	30
20 EXAM Level of Effort	108.5	248	62	0	186	77.5	31	48	31
21 DIF1 Level of Effort	0	0	0	0	9.3	0	0	0	0
22 DIF2 Level of Effort	0	0	0	0	18.6	0	0	0	0
23 DIF3 Level of Effort	0	0	0	0	0	0	0	0	0
25 PAPR Level of Effort	0	0	0	0	0	0	0	0	0
27 SUPRV1 Level of Effort	0	0	0	4	0	0	0	0	0
28 SUPRV2 Level of Effort	0	0	0	0	0	0	0	0	0
29 ACTA Level of Effort	0	0	0	40	0	0	0	0	0
TOTAL CUMULATIVE LEVEL OF EFFORT BEYOND DEGREES	217	496	124	153	400	155	86	96	62
31									
32 TOTAL PSCOR SCORE	6309	5448	5262	3794	214	78	55	48	31
33 RATIO TO ABET PE LICENSE	40%	34%	33%	24%	1%	0%	0%	0%	0%
34 RATIO AGAINST GLADWELL	63%	54%	53%	38%	2%	1%	1%	0%	0%

Illustration 5- Credentials Scoring LOWER than the PE EIT

Illustration 5 - Credentials Scoring LOWER than the PE EIT

This category of credentialing was designed for those who have selected project or program management as a possible career path objective to get started, whether they have a degree or not. Generally speaking there is no issue with this category other than the fact that the AXELO PRINCE2 Foundation and Practitioner as well as the AXELO ITIL Foundation and Expert levels fall in this category. Why? Because neither the PRINCE2 nor ITIL credentials require ANY experience nor do they require any degree. (See pink outline above)

¹⁷ Butts, Glenn (2009) “The Joint Confidence Level Paradox: Joint Confidence Level Paradox:- A History of Denial A History of Denial” <http://www.build-project-management-competency.com/wp-content/uploads/2009/12/NASA-Cost-Schedule-Report.pdf>

¹⁸ Butts, Glenn (2010) “Mega Projects Estimates-A History of Denial” See specifically slides #11, #12, #20.#31 and #32. <http://www.build-project-management-competency.com/wp-content/uploads/2010/09/Glenn.Butts-Mega-Projects-Estimates.pdf>

Speaking pragmatically, would you get on the next commercial jet if you knew the pilot in command had never proven he/she could take off or land the plane? And another trait of any profession is the requirement for “long or extended periods of learning”. Wouldn’t that mean at least a bachelor’s degree? Given that some organization in the UK are lobbying the Privy Council to make project management a profession, then why don’t the premier credentials being created in the UK with the tacit support of HMG¹⁹ require at least a 4 year degree as well as some documented experience? This is a challenge those who hold these credentials should

CONCLUSIONS AND RECOMMENDATIONS

To conclude, this is the reality we are facing today. Despite AACE having been around since 1956, IPMA since 1964 and PMI since 1969 there has been no apparent improvement in the delivery of projects. Abysmal failures such as the “Obamacare” rollout, Boston’s “Big Dig” and any one of a number of project disasters found on the front pages of your daily newspaper abound. This lack of any measurable improvement over the past 60+ years is damaging the image of project managers and, as practitioners, we need to be proactive in putting an end to this.

So what are the ACTIONABLE ITEMS we can initiate and support to help raise the professional image of project management and earn the respect we all like to think we are entitled to? To wrap up this paper, I will leave you with three recommendations which I believe are “doable” and which will help us to deliver projects more successfully and in the process, raise the professional image of project managers.

There are two fundamental truths which should be indisputable –

- 1) You CANNOT learn project management by studying books about project management; The only way to learn project management is the same way one learns to drive a car. By getting behind the wheel and actually driving.
- 2) You CANNOT validate project management competency by preparing for, taking and passing multiple choice exams; the only way to validate whether a person is “competent” is by observing them in action and seeing the outcomes of their actions and decisions.

Again, using the analogy of obtaining your first driver’s license, you take a multiple choice exam only to establish that you know the rules of the road, signage and relevant driving protocols, then you practice driving around under the supervision of a driving instructor and finally, you get to demonstrate your competency with the DMV officer sitting next to you. That is, in essence what any competency assessment program should look like.

Taking the analogy one step further, just because you obtained your first driver’s license which entitles you to drive the family sedan, does not mean you are qualified to drive a

¹⁹ AXELOS is a new joint venture company, created by the Cabinet Office on behalf of Her Majesty's Government (HMG) in the United Kingdom and Capita plc to run the Best Management Practice portfolio, including the ITIL and PRINCE2 professional standards.

school bus, tractor-trailer or construction equipment, meaning that there are different levels of competency between being an amateur driver and a professional driver.

And taking the analogy to closure, IF you drive unsafely getting in accidents, driving drunk or getting too many speeding tickets, your licence to practice will be revoked. Now, I am not advocating licensure for project managers but I do think the analogy is both appropriate and relevant.

So given that project management can ONLY be learned by doing projects and given it is not only the technical skills but also the soft skills as well, doesn't it make sense then that any effective courses on project management should be PROJECT BASED? And that any credentialing process which is competency based should be more focused not on passing exams but actual observable and measurable performance?

FUNDAMENTAL TRUTH

You CANNOT learn project management by reading books.....
The only way to develop competency in project management is by hands on experience...

The only source of knowledge is experience ~ Albert Einstein

Experience is a tough teacher. She gives the test first and the lesson after ~ William H. Ottley

Human beings, who are almost unique in having the ability to learn from the experience of others, are also remarkable for their apparent disinclination to do so ~ Douglas Adams

Illustration 6 - Project Management CANNOT be learned by reading books

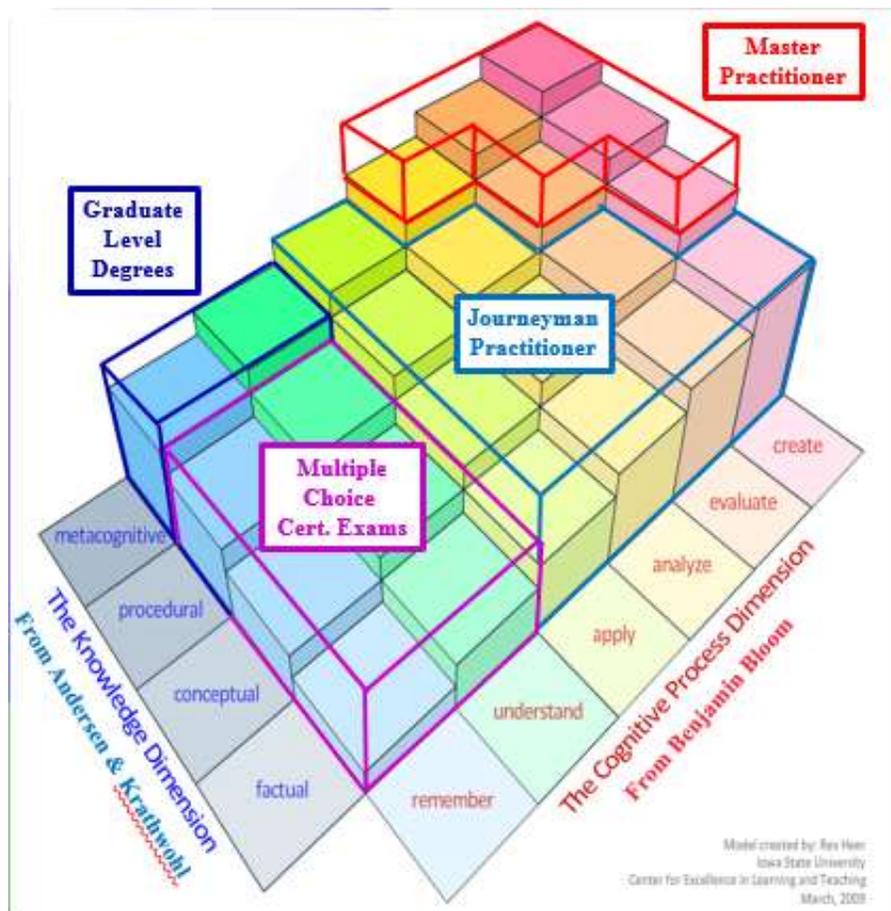
RECOMMENDATION #1

All credible training providers should be required to demonstrate how their courses are consistent with Project Based Learning (PBL) <http://www.bie.org/> For academic institutions, Worcester Polytechnic Institute, Worcester, MA, USA has long had a project based degree

engineering program in place. <http://www.wpi.edu/about/index.html> Suggest those in academia base their project and program management courses around the WPI model.

For those who are in the training/consulting business, we MUST stop “teaching to the exam” with the only or primary purpose being to prepare people to pass multiple choice exams. To be credible, our training programs should be project based and they should be focused on building not only the technical skills but the ever so critical soft skills.

Failure to develop truly professional level training programs designed to build competency as opposed to merely passing multiple choice exams is causing significant damage to the credibility of project management as a legitimate and respected career path objective. This is or should be an ETHICAL issue and “teaching to the exam” should be specifically included as being an ethical violation in all professional society codes of ethics.



Moor, R. (2009) Iowa State University, Center for Excellence in Learning and Teaching
<http://www.celt.iastate.edu/teaching/RevisedBlooms1.html> last accessed 1/28/12

Illustration 9 - Example of a credible, research based competency assessment framework²⁰

²⁰ A Model of Learning Objectives—based on *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives* by Rex Heer,
<http://www.celt.iastate.edu/teaching/RevisedBlooms1.html>

RECOMMENDATION #2

For any organization, be it a not-for-profit professional organization, governmental agency or commercial business wanting to create a competency assessment instrument, in order to have any credibility, it needs to be consistent with tested and proven educational “best practices”. For this I am recommending that organizations adopt the Iowa State University Center Of Excellence in Learning and Teaching’s “A Model of Learning Objectives–based on *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives* by Rex Heer, Center for Excellence in Learning and Teaching, Iowa State University, which is licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License](https://creativecommons.org/licenses/by-nc-sa/3.0/)”, as the basis for their competency assessment matrix. As can be seen from the above model, we are not only assessing the various types of knowledge, but are also assessing how practitioners USE or APPLY that knowledge.

For those organizations seeking to hire training providers or consultants, I would urge you to seek out those training providers and/or consultants who can demonstrate they have built their course or consulting materials around the Iowa State model, focusing not only on the knowledge dimensions but also on how to USE that knowledge to achieve the strategic and tactical objectives as an outcome from the training.

RECOMMENDATION #3

Far too many business and governmental organizations continue to run 2, 3, 4 and 5 day project management courses and then never follow up to see if the training they paid serious money for has resulted in positive change in what people do at work. For us to improve the delivery of projects, those who provide training should be measured and assessed on how effectively their programs of training result in behavioural changes and measurable business results. For my final recommendation I am urging that organizations who are serious about improving their project management capability, seek out and retain only those training providers who can demonstrate their programs of study result in a favourable Return on Training Investment (RoTI) How to do this? The Kirkpatrick Method is a well-established and proven program that involves training providers in creating training programs which actually deliver positive, measurable results.

For those professional organizations or societies which require or have developed Approved Training Organizations (ATO’s); Registered Education Providers (REP’s) or Approved Education Providers (AEP’s) need to put in place an assessment or evaluation of those training providers based not only on the content of their programs but more importantly, how EFFECTIVE they are at transferring the skills and knowledge in their classes as well as how effective they are in producing measurable results- that is, conduct follow up assessments to find out just how much of what these training providers teach is actually being used 90 days after the completion of the classes.

For those organizations who seek to obtain training for your organization, you too should be requiring respondents to training RFP’s to demonstrate how they propose to develop behavioural

changes and then how they propose to work with your HR and competency development teams to measure and analyse the results in achieving organizational goals and training objectives.

Lastly for those companies or individuals who develop and/or deliver training, first develop your course materials in such a way that they are focused on developing behavioural changes and using project based workshops, develop the ability of those in your classes to actually apply what you are teaching them to do. And when you do your assessments, instead of relying only on the “smiley face” reviews at the end of your course, work more closely with the HR and Competency Development departments of your clients to measure and assess your effectiveness at Kirkpatrick Levels 2, 3 and 4.

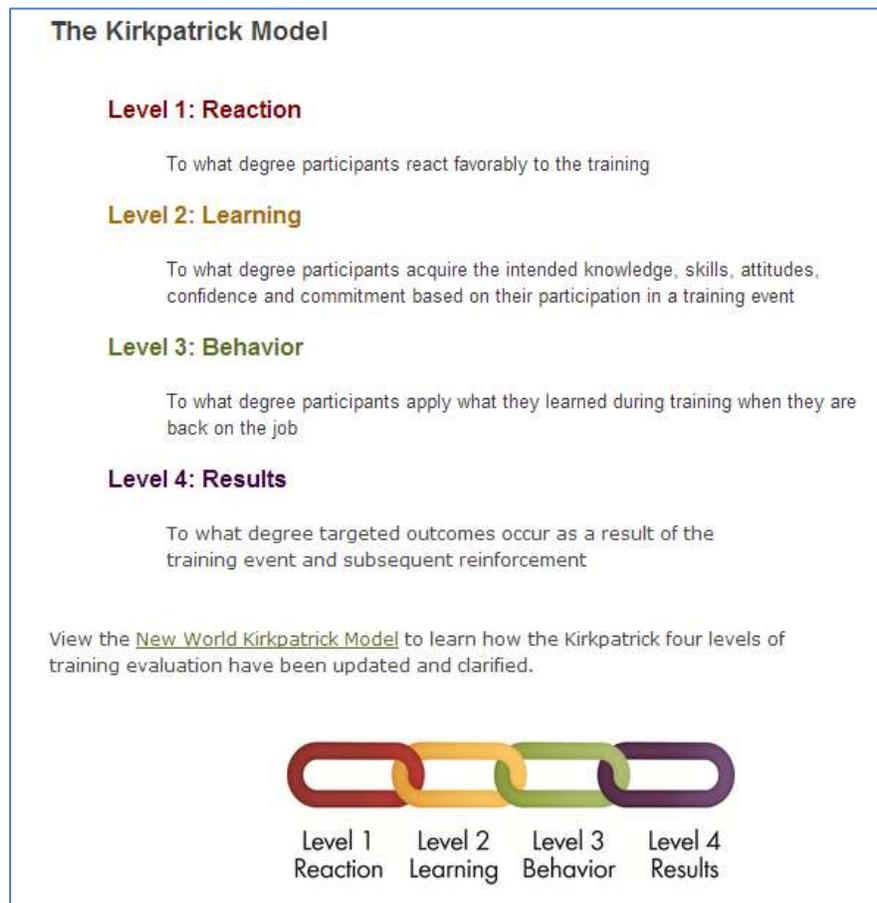
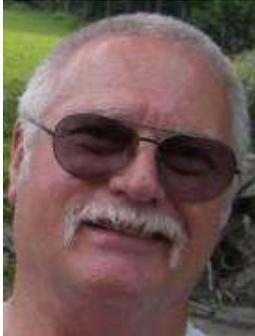


Illustration 10 - The Kirkpatrick Model of Training Design, Implementation and Assessment²¹

If we can only adopt these three relatively small improvements, I honestly believe we can start to truly improve the delivery of projects and in the process, EARN the respect of those who use or rely on our professional services.

²¹ Kirkpatrick Method (2013)
<http://www.kirkpatrickpartners.com/OurPhilosophy/TheKirkpatrickModel/tabid/302/Default.aspx>

About the Author



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He has spent 18 of the last 35 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. Most recently, he worked as a Senior Project Cost and Scheduling Consultant for Caltex Minas Field in Sumatra and Project Manager for the Taman Rasuna Apartment Complex for Bakrie Brothers in Jakarta. His current client list includes AT&T, Ericsson, Nokia, Lucent, General Motors, Siemens, Chevron, Conoco-Philips, BP, Dames and Moore, SNC Lavalin, Freeport McMoran, Petronas, Pertamina, UN Projects Office, World Bank Institute and many other multi-national companies and NGO organizations.

Dr. Giammalvo holds an undergraduate degree in Construction Management, his Master of Science in Project Management through the George Washington University and was awarded his PhD in Project and Program Management through the Institute Supérieur De Gestion Industrielle (ISGI) and Ecole Supérieure De Commerce De Lille (ESC-Lille- now SKEMA School of Management) under the supervision of Dr. Christophe Bredillet, CCE, IPMA A Level. Paul can be contacted at pauldgphd@gmail.com.