

## Project Management Certification Benchmarking Research: 2020 Update<sup>1</sup>

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### INTRODUCTION

This is the fourth in a series of updates to this research, and most likely, the last update to an ongoing research project started in 2010 to benchmark as many globally recognized project management credentials as possible against two independent and external standards. To appeal to Millennial practitioners, the first benchmark was to test against Malcolm Gladwell's "10,000-hour" rule<sup>2</sup> while the second benchmark was the level of effort as well as the milestones required to earn the Professional Engineers (PE) license<sup>3</sup> in the USA, which we know to be a legitimate professional license to practice issued by the State governments. For the purposes of this paper, the National Society of Professional Engineers (NSPE) and National Council of Examiners for Engineering and Surveying (NCEES) standards were adopted as the basis for establishing the engineering benchmarks. Additional or supplemental references were made to private and commercial pilot's licensing requirements, where necessary to provide context or comparisons.

The original purpose of this research was to:

1. To provide the basis to compare the relative "value" or "worth" of the various credentials based on a true ratio scale.
2. To provide the basis to compare "equivalency" and "value for money" (benefit: cost analysis)
3. To serve as a challenge to those organizations offering these certifications to "raise the bar" to meet legitimate standards of professional assessment.

Having met all 3 objectives and having put the scoring model into the public domain under Creative Commons License BY, the author hopes that others will pick up this research and carry it forward.

To recap, here is the scoring model, which was designed to STANDARDIZE as many of the COMMON variables as possible (such as the value of a bachelors degree) so that only those attributes which served to truly differentiate one certification or credential from others were included in the total score, which measured the total level of effort to prepare for, prequalify, qualify and earn each credential, "the underlying hypothesis being the more robust and rigorous the process, and the more it looks beyond the ability to pass multiple-choice exams and actually analyzes real-life "deliverables and outcomes, the more likely it is to validate that the person holding the credential is "competent."

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<sup>2</sup> Gladwell, Malcolm 2018 Youtube Presentation "10,000 Hours Demystified"  
<https://www.youtube.com/watch?v=1uB5PUgZeY>

<sup>3</sup> National Society for Professional Engineers (NSPE) <https://www.nspe.org/resources/licensure/resources/faq>

1	Rank Order based on PSCOR	Rank order of each credential based on the total Level of Effort required to earn the credential (PSCOR)
2	Organizational Affiliation: Acronym of Credential:	Organization responsible to create and/or manage the credential (i.e. PMI) Trade marked acronym used to identify the credential (i.e. PMP)
3	Required Experience Hours AFTER Bachelors Degree	Total hours required IN ADDITION to a Bachelors or 4 year degree. IF no degree is required then the MINIMUM experience is entered here. If no experience is required this cell is left blank.
4	Bachelors (BDEG)	The standardized value of a bachelors degree is 5,200 level of effort hours total
5	Masters (MDEG)	The standardized value of a masters degree is 1,900 level of effort hours total
6	PhD/DBA (PDEG)	The standardized value of a PhDs degree is 5,160 level of effort hours total
7	Exam Duration in Hours	IF an exam is required, how long is it in hours? If no exam is required, the cell is left blank
8	Level of Effort To Prepare for Exam	How many hours does it normally take the average person to prepare to sit for the exam and have a reasonable chance of passing?
9	TOTAL EXAM Level of Effort	Sum of Rows 7 and 8
10	Exam Difficulty Factor DIF1	IF an exam requires a mix of matching, fill in the blank or rank ordering, a 5% difficulty factor is given to the exam.
11	Exam Difficulty Factor DIF2	IF an exam requires a mix of matching, fill in the blank or rank ordering PLUS short answer essay responses, a 10% difficulty factor is given to the exam.
12	Exam Difficulty Factor DIF3	IF an exam requires a mix of matching, fill in the blank or rank ordering, short answer PLUS long answer essay responses, a 15% difficulty factor is given to the exam.
13	PAPR Level of Effort	For each 2500+ word paper is required, 50 Level of Effort hours is awarded
14	Formal Mentorship (SUPRV1)	IF a FORMAL mentorship/supervised internship or apprenticeship is required, the average or typical level of effort hours is recorded and added to the total.
15	Peer Assessment (SUPRV2)	IF a FORMAL assessment by a trained and/or certified assessor is required, the average or typical level of effort hours to perform the assessment is recorded and added to the total.
16	REQUIRED courses	IF there are any courses REQUIRED as a prerequisite to take the exam, those hours are recorded here. (i.e. PMI requires 35 hours before the PMP can be taken)
17	ACTA Level of Effort	Is the average or typical level of effort that the APPLICANT must invest in order to prepare for, apply for and complete all the administrative requirements to become certified
18	TOTAL PSCOR SCORE	This is the total cumulative level of effort in hours added from Rows 3-8 and 10 - 17. (Row 9 is the sum of Rows 7 and 8)
19	RATIO TO ABET PE LICENSE	Ratio of the PSCOR/16,204 Level of Effort Hours to earn the ABET PE.
20	RATIO AGAINST GLADWELL	Ratio of the PSCOR/10,000 Level of Effort Hours identified by Malcolm Gladwell.
21	EXPERIENCE to TOTAL RATIO	Total Hours from Row 3/PSCOR. Assumption being EXPERIENCE is more important than tests.

Table 1- Scoring Model Explained

Figure 2 below will help to explain in the “Big Picture” how the various credentials are rated or analyzed against both Gladwell’s “10,000 Hour” rule AND the PE license milestones.

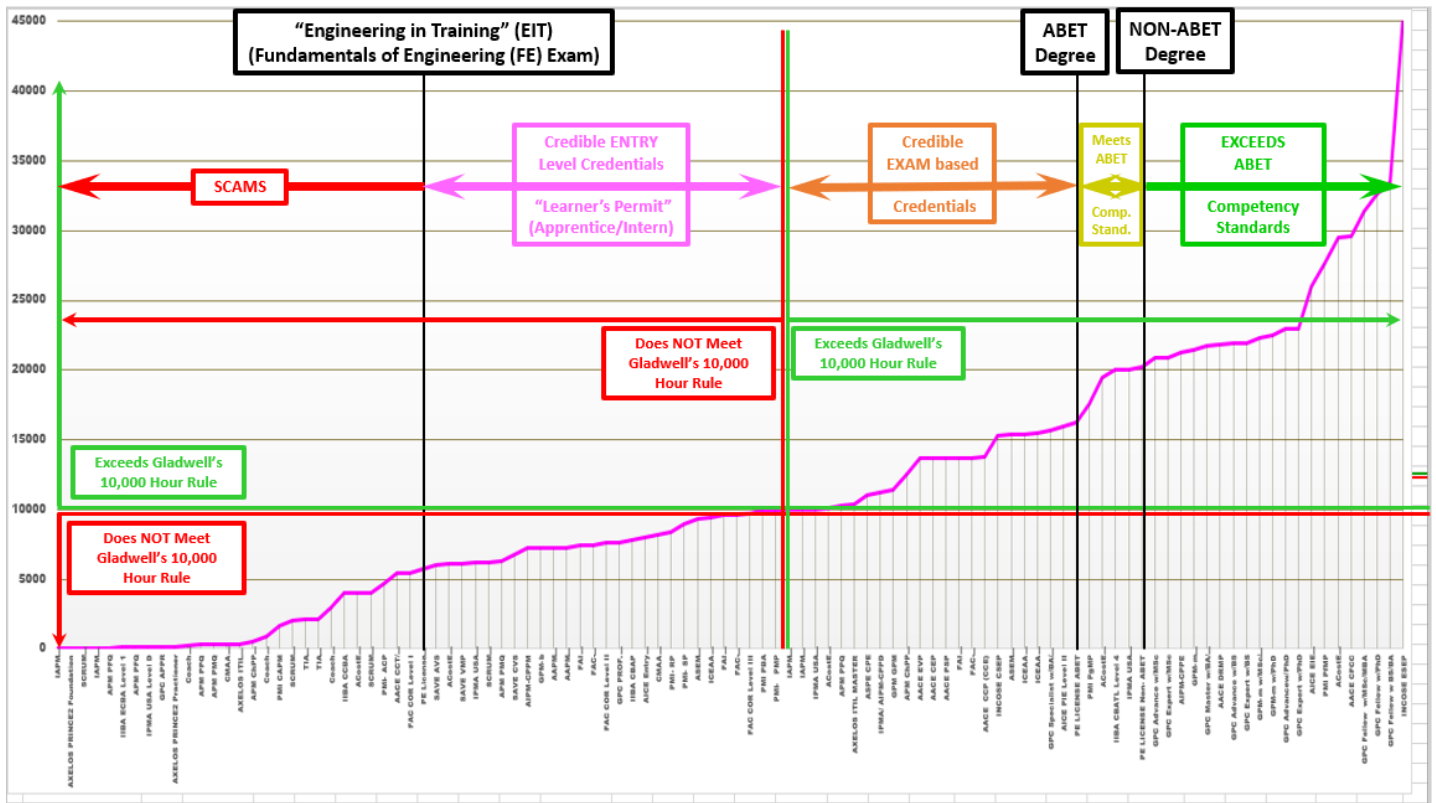


Figure 2- Ranking and Assessment Scoring Model Explained.

Using the Total Level of Effort (PSCOR from Line Item 18 in Table 1) on the X-axis, we rank order the 104 credentials from low on the left to high on the right. Then we superimpose Gladwell’s “10,000-hour” rule,

which any given credential either exceeds or does not exceed. We will discuss this in more detail, but there is no shortage of concerns with Gladwell's 2008 claims that it takes 10,000 hours to produce a competent anything, a topic which was covered extensively in previous editions of this paper.<sup>4 5 6 7</sup>

Thus, the first observation worth noting is that roughly half of the globally recognized project-related credentials do not even meet Gladwell's "10,000-hour" test, which, given we know that has been challenged on many fronts, should give us all cause to worry.

Looking across the top, we can see the 3 major milestones or attributes of the PE licensing process. For those who are not familiar with what it takes to earn a PE license, there are generally 4 requirements that must be met:<sup>8</sup>

- 1) "a four-year engineering degree in a program approved by the state engineering licensure board," (either ABET-accredited or additional experience in lieu of a degree from a non-ABET accredited university)"
- 2) "four years of qualifying engineering experience, and who successfully completes
- 3) the eight-hour Fundamentals of Engineering (FE) Examination<sup>9</sup>,
  - a. "The FE exam includes 110-questions. The exam appointment time is 6 hours long and includes:
    - i. Nondisclosure agreement (2 minutes)
    - ii. Tutorial (8 minutes)
    - iii. Exam (5 hours and 20 minutes)
    - iv. Scheduled break (25 minutes)
    - v. Learn more at the [NCEES YouTube channel](#)."
- 4) "The eight- hour Principles and Practice of Engineering (PE) Examination will be licensed as a professional engineer."<sup>10</sup>

Summarized, it means in their last year of university, a student normally takes their 8-hour long Engineering Fundamentals Exam (FE), after which they earn the designation of "Engineer in Training" (EIT). They then must work between a 4 – 7-year "apprenticeship" or "internship" under the direct supervision and mentorship of a licensed professional, and at completion, must take another 8-hour exam after being recommended by their mentor. It is very important that people understand this process as you analyze and compare the requirements imposed by the various project management societies.

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<sup>4</sup> Giammalvo, Paul D (2010) Original Publication <https://pmworldlibrary.net/wp-content/uploads/2013/02/PMWJ6-Jan2013-GIAMMALVO-Project-Management-Certifications-Compared-SecondEdition.pdf>

<sup>5</sup> Giammalvo, Paul D (2013) 1<sup>st</sup> Update <https://pmworldlibrary.net/wp-content/uploads/2013/02/pmwj7-feb2013-giammalvo-project-management-certifications-compared-updated-featured-paper2.pdf>

<sup>6</sup> Giammalvo, Paul D (2015) 2<sup>nd</sup> Update <https://pmworldlibrary.net/wp-content/uploads/2015/01/pmwj30-Jan2015-Giammalvo-Certification-Benchmarking-2015-update-featured-paper.pdf>

<sup>7</sup> Giammalvo, Paul D (2016) 3<sup>rd</sup> Update <https://pmworldlibrary.net/wp-content/uploads/2016/12/pmwj53-Dec2016-Giammalvo-Certification-Benchmarking-2016-update-featured-paper.pdf>

<sup>8</sup> National Association of Professional Engineers (n.d.) <https://www.nspe.org/resources/licensure/how-get-licensed>

<sup>9</sup> The National Council of Examiners for Engineering and Surveying (NCEES) <https://ncees.org/engineering/fe/>

<sup>10</sup> The National Council of Examiners for Engineering and Surveying (NCEES) <https://ncees.org/engineering/pe/>

## **Credentials Classified as SCAMS**

IF a credential does NOT meet EITHER a minimum of 10,000 hours level of effort OR the same or higher level of effort required to pass the FE exam and earn the EIT designation, these credentials, when looked at in the context of being legitimate professional level credentials are a joke and should be avoided as being largely a waste of time and money, as they validate neither experience nor the ability to pass appropriately tough or demanding professional level exams comparable to those required in earning the EIT (FE Exam). While the author is truly sorry if this truth offends anyone but speaking as a practitioner, would you really hire anyone with these credentials to manage a project where your own money was on the line if the project succeeds or fails?

## **ENTRY LEVEL or “LEARNER PERMIT” Level CREDENTIALS**

These credentials meet or EXCEED the requirements to pass the FE and earn the designation of Engineer in Training (EIT). Credentials falling in this category are analogous to one earning your “learners permit” to drive the family sedan around town when you were 16 or 17 and got your first driver's license. Put in the context of commercial airline piloting, which is also recognized as a profession, this level is equivalent to getting your student pilot's certificate that authorizes you to make solo flights in a single-engine plane under Visual Flight Rules (VFR)<sup>11</sup>. Pay special attention to the requirement that 13 TakeOffs and Landings are required, 10 supervised and 3 unsupervised. As the credentials falling in this range do NOT meet Gladwell's 10,000 level of effort hours, which we know has been challenged on many occasions, these are NOT legitimate professional level credentials.<sup>12</sup> To drive

**Airplane Single Engine Rating**

Total Time: 40 hours minimum which consists of at least:

**Dual: 20 hours minimum of flight training with an instructor on the Private Pilot areas of operation including:**

1. 3 hours of cross country flight training in a single engine airplane;
2. 3 hours of night flight training in a single engine airplane, that includes at least:
  - a) 1 cross country flight of over 100 nm total distance; and
  - b) 10 T/O's and 10 landings to a full stop with each involving a flight in the traffic pattern at an airport.
3. 3 hours of flight training by reference to instruments in a single engine airplane; and
4. 3 hours of flight training in a single engine airplane within the 60 days prior to the practical test.

**Solo: 10 hours minimum of solo flying in a single engine airplane on the Private Pilot areas of operation including:**

1. 5 hours of solo cross country flying;
2. 1 solo cross country flight of at least 150nm total distance with full stop landings at 3 points and one segment of at least 50nm between T/O and landings; and
3. 3 T/O's and landings to a full stop at an airport with an operating control tower.

**Figure 3- Requirements to become a private pilot, single-engine, VFR rating<sup>13</sup>**

<sup>11</sup> Requirements to earn a private pilots license. <https://www.firstflight.com/private-pilot-requirements/>

<sup>12</sup> De Luce, Ivan (2019) “Why Malcolm Gladwell's 10,000 Hour Rule Doesn't Actually Hold Up” Money Magazine <https://money.com/money/5652947/10000-hour-rule-is-wrong/>

<sup>13</sup> Requirements to earn a private pilots license. <https://www.firstflight.com/private-pilot-requirements/>

home the point of how basic or fundamental these credentials are in the context of legitimate professional level

credentials, compare the requirements to earn your private pilot's license, single-engine, visual flight rules (VFR) against what your favorite professional society requires to earn their certifications? Do you REALLY believe these are valid and legitimate "professional" level credentialing processes?

Credentials that fall in this category definitely do not qualify as a "Gold Standard," and they definitely do not validate COMPETENCY at an appropriate professional level. This is a LIE and is against all the professional codes of ethics and probably violates the intent if not the letter of the "Truth in Advertising" laws common in most developed nations of the world.

For benchmarking purposes, compare what is required to become a Licensed Commercial Pilot [https://study.com/articles/Become\\_a\\_Licensed\\_Commercial\\_Pilot\\_Step-by-Step\\_Career\\_Guide.html](https://study.com/articles/Become_a_Licensed_Commercial_Pilot_Step-by-Step_Career_Guide.html) keeping in mind that for each flight hour logged, requires between 2-3 hours of pre- or post-flight prep and paperwork responsibilities.

### **CREDIBLE EXAM BASED CREDENTIALS**

Once the level of effort hours to earn a credential has exceeded Gladwell's 10,000-hour rule, we can make an argument that they at least identify a committed practitioner rather than an "accidental" project team member. That the person is investing the time, effort and yes, money, to be continuing their education while working in the field of project management. This would be roughly equivalent to the 4-7 years apprenticeship or internship served by the Engineer in Training under the watchful eyes and mentoring of a licensed professional. Applied to the construction trades, this level is known as "apprenticeship"<sup>14</sup> and is usually 4-5 years long. In medicine, this is known as an internship<sup>15</sup>. Credentials falling in this category do NOT meet the minimum level of requirements to be known as a professional but are certainly legitimate practitioners. In the world of commercial piloting, this is known as "building hours" to achieve the minimum requirements to be considered employable by the commercial airlines, which is a minimum of 1500 but more realistically 3000 hours. <https://www.flightdeckfriend.com/how-long-does-it-take-to-become-a-captain/> As it requires 2-3 hours of pre- or post-flight hours to perform administrative matters related to the flight, means a minimum of 4500 and more realistically 9000 hours to obtain a job as a commercial pilot for budget airlines and 10,000 to 15,000 hours for long haul "flag" carriers.

### **MEETS ABET REQUIREMENTS**

While earning one's Professional Engineer (PE) license requires one to graduate from an ABET-accredited university, most states will accept a degree from a non-ABET university provided the EIT, apprentice or intern logs additional hours of experience in lieu of having earned an ABET degree. Any credential whose total level of effort falls within this range (16,000 to 20,000 LoE hours) can or should be able to produce proof of their work products validating that they are in fact, legitimate, competent, professional practitioners, PROVIDED the process used to evaluate their knowledge and work products is substantially rigorous enough to meet or exceed the 4 requirements shown by the NSPE, including passing the 8 hours long, Practice of Engineering (PE) Examination required to be licensed as a professional engineer.<sup>16</sup>

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<sup>14</sup> Carpenter Union Apprenticeship Program- <https://www.carpenterslocal272.org/about-us/apprentice-program>

<sup>15</sup> Biomedical Sciences Career Program- <https://www.bscp.org/scholarship/preparing-for-medical-internships/>

<sup>16</sup> The National Council of Examiners for Engineering and Surveying (NCEES) <https://ncees.org/engineering/pe/>

## **EXCEEDS ABET REQUIREMENTS**

Credentials falling in this category have not only met the requirements for both ABET and non-ABET professionals but EXCEED them. This means the total level of Effort (LoE) hours exceeds 20,000. Generally speaking, the people who fall in this category are those who are recognized by their peers and their industry in general as “thought leaders,” those who are known and broadly respected in their field. Professionals who have made significant contributions to the knowledge base and practical applications in their sector. This would include educators and those holding advanced degrees who publish and contribute to the knowledge base.

## **UPDATES FOR 2020**

For this 2020 update, we have ADDED the following NEW credentials to our analysis. (In alphabetical order)

- 1) American Academy of Project Management-  
<http://americanacademyofprojectmanagement.com/certification.html>
- 2) Certified Scrum Master- <https://www.cio.com/article/3318258/csm-certification-guide-certified-scrummaster-exam-explained.html>
- 3) Coaching Certifications- <https://www.coachnet.org/>
- 4) CompTIA Project- <https://www.comptia.org/certifications/project>
- 5) Construction Management of America’s Certified Construction Manager (CCM)
- 6) International Association of Project Managers  
<https://www.iapm.net/en/certification/overview/>
- 7) International Cost Estimating and Analysis Association  
<http://www.iceaaonline.com/certification/>

And we have UPDATED credentials previously reviewed based on known or proposed changes they have made or are planning to make to their credentials (In alphabetical order)

- 1) Project Management Institute
- 2) Guild of Project Controls
- 3) APM/APMG
- 4) Axelos PRINCE2/ITIL

As in previous years, the data used for this assessment was obtained from the websites accessible by the consuming public. While reasonable efforts were made to clarify any vague information, not all organizations are keen to cooperate in making their information available.

***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, OMISSIONS OR CHALLENGES, THE AUTHOR WILL BE HAPPY TO MAKE WHATEVER CORRECTIONS OR ADJUSTMENTS ARE DEEMED APPROPRIATE, BUT ONLY UPON RECEIPT OF WRITTEN PROOF FROM AN AUTHORIZED INDIVIDUAL FROM THE ORGANIZATION SHOWING WHERE THE INPUT DATA IS INCORRECT.***

**Combined Findings for all 104 Credentials for 2020**

1	Rank Order based on PSCOR	104	103	102	101	100	99	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80	79	78	77	76
2	Organizational Affiliation/ Acronym of Credential	IAPM CJPM	AXELOS PRINCE2 Foundation	SCRUM CSM	IAPM CPM	APM PFQ	ECBA Level 1	APM PFQ	IPMA USA Level D	GPC APP R	AXELOS PRINCE2 Practioner	Coach ACC	APM PPQ	APM PMQ	CMAA CMIT	AXELOS ITIL XPERT	APM ChPP (Routes 1 and 2)	Coach PCC	PMI CAPM	SCRUM A-CSM	TIA Project	TIA A+	Coach MCC	IIBA CCBA	ACostE Entry	SCRUM A-CSO	PMI-ACP	AACE CCT/CST	FAC COR Level I	PE License EIT
18	TOTAL PSCOR SCORE	1	20	42	62	82	103	104	145	155	155	240	278	283	304	364	519	866	1649	2014	2124	2125	2960	3997	4000	4037	4688	5416	5440	5636
19	RATIO TO ABET PE LICENSE	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.03	0.05	0.10	0.12	0.13	0.13	0.18	0.25	0.25	0.25	0.29	0.33	0.34	0.35
20	RATIO AGAINST GLADWELL	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.03	0.03	0.03	0.04	0.05	0.09	0.16	0.20	0.21	0.21	0.30	0.40	0.40	0.40	0.47	0.54	0.54	0.57
21	EXPERIENCE to TOTAL RATIO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42	0.00	0.00	0.00	0.00	0.00	0.58	0.91	0.93	0.94	0.94	0.84	0.94	1.00	0.99	0.96	0.00	0.00	0.00

**Table 2- Certifications that score LOWER than the EIT (Categorized as SCAMS)**

Of the 104 certifications benchmarked and analyzed in the 2020 report, 28 of them or ~27% do NOT meet the level of effort it takes to earn the Engineer in Training (EIT) designation. Given the FE exam is given in the senior year in university, those organizations whose credentials score in this range REALLY need to give serious thought to upgrading the requirements of their credentials. These are labeled as being SCAMS as they validate neither the most basic experience requirements (~5,700 level of effort hours) OR any rigorous exams or other assessment processes comparable to what professional engineers are expected to be able to know. For the purposes of BENCHMARKING, The FE exam <https://ncees.org/engineering/fe/> “includes 110-questions. The exam appointment time is 6 hours long and includes

- Nondisclosure agreement (2 minutes)
- Tutorial (8 minutes)
- Exam (5 hours and 20 minutes)
- Scheduled break (25 minutes)”

Compare this requirement for the EIT against the fact that many of the project management credentials falling in this category require only 1 – 2 hours long, multiple-choice exams with passing grades of 50% to 60%. Hardly a credential for a true professional to be proud of earning and even less for any company to rely upon in the hiring process.

Rank Order based on PSCOR	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48
Organizational Affiliation: Acronym of Credential:	PE License EIT	SAVE AVS	ACostE Enrolled	SAVEVMP	IPMA USA C Level	SCRUM CSO	APM PMQ	SAVE CVS	AIPM-CPPM	GPM-b	AAPM CIPM	AAPM MPS	FAI FAC-C Level I	FAC-P/PM Entry	FAC COR Level II	GPC PROF. w/BA/BS	IIBA CBAP	AICE Entry Level 1	CMAA CMM	PMI- RP	PMI- SP	ASEM AEM	PMI- RMP	ICEAA PCEA	FAI FAC-C Level II	FAC-P/PM Mid	FAC COR Level III	PMI PBA	PMI- PMP
TOTAL PSCOR SCORE	5696	5970	6079	6130	6164	6173	6283	6810	7200	7235	7256	7270	7440	7440	7632	7635	7777	7998	8218	8387	8887	9324	9367	9394	9632	9632	9704	9888	9908
RATIO TO ABET PE LICENSE	0.35	0.37	0.38	0.38	0.38	0.38	0.39	0.42	0.44	0.45	0.45	0.45	0.46	0.46	0.47	0.47	0.48	0.49	0.51	0.52	0.55	0.58	0.58	0.58	0.59	0.59	0.60	0.61	0.61
RATIO AGAINST GLADWELL	0.57	0.60	0.61	0.61	0.62	0.62	0.63	0.68	0.72	0.72	0.73	0.73	0.74	0.74	0.76	0.76	0.78	0.80	0.82	0.84	0.89	0.93	0.94	0.94	0.96	0.96	0.97	0.99	0.99
EXPERIENCE to TOTAL RATIO	0.00	0.04	0.99	0.04	0.97	0.97	0.95	0.07	0.28	0.28	0.28	0.28	0.27	0.27	0.26	0.26	0.96	0.25	0.97	0.36	0.39	0.43	0.43	0.43	0.42	0.42	0.41	0.46	0.45

Table 3- Certifications that EXCEED the EIT but score LESS THAN Gladwell’s “10,000 Rule”.

Of the 104 credentials benchmarked this year, 28 of them (~27%) score in this range. Credentials in this range are legitimate “entry-level” credentials, requiring between 5,700 to 9,999 level of effort hours and are analogous to obtaining your “learners permit” to drive the family sedan around town when you were 16 or 17. When compared against the trades or medicine, this range is most comparable to serving a 4 or 5-year apprenticeship or internship, where you are qualified by formal education or experience in lieu of formal education, but you are working under the watchful eyes of an experienced professional practitioner as a mentoree. At the left-hand side of this table would be comparable to a 1<sup>st</sup>-year apprentice/intern, and at the right-hand side would be more like a 4<sup>th</sup>-year apprentice/intern.

Unfortunately, far too many of these credentials are being touted as being “professional” or “Gold Standard” credentials, when in fact most of them validate nothing more than the ability to pass 2-5 hour multiple-choice exams, which are not even as stringent as those required to pass the FE Exam to obtain one’s EIT designation.

Rank Order based on PSCOR	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25
Organizational Affiliation: Acronym of Credential:	IAPM CSPM	IAPM CIPM	IPMA USA B Level	ACostE Registered	APM PPQ	AXELOS ITIL MASTER	ASPE CPE	IPMA/AIPM-CPPD	GPM GPM	APM ChPP (Routes 1 and 2)	AAACE EVP	AAACE CEP	AAACE PSP	FAI FAC-C Level III	FAC-P/PM Senior	AAACE CCP (CCE)	INCOSE CSEP	ASEM PEM w/BA/BS	ICEAA CCEA	ICEAA CCEA-P	GPC Master w/BA/BS	AICE PIE Level II	PE LICENSE ABET
TOTAL PSCOR SCORE	10001	10002	10025	10114	10278	10388	10991	11209	11415	12519	13671	13671	13671	13704	13704	13820	15329	15378	15412	15444	15691	15998	16207
RATIO TO ABET PE LICENSE	0.62	0.62	0.62	0.62	0.63	0.64	0.68	0.69	0.70	0.77	0.84	0.84	0.84	0.85	0.85	0.85	0.95	0.95	0.95	0.95	0.97	0.99	1.00
RATIO AGAINST GLADWELL	1.00	1.00	1.00	1.01	1.03	1.04	1.10	1.12	1.14	1.25	1.37	1.37	1.37	1.37	1.37	1.38	1.53	1.54	1.54	1.54	1.57	1.60	1.62
EXPERIENCE to TOTAL RATIO	1.00	1.00	1.00	0.99	0.97	0.96	0.91	0.54	0.53	0.96	0.59	0.59	0.59	0.58	0.58	0.58	0.65	0.65	0.65	0.65	0.64	0.63	0.62

Table 4- Certifications that require >10,000 Level of Effort Hours but < an ABET PE license of 16,000 LoE Hours.



Since the total level of effort exceeds 10,000 hours, IF you subscribe to Gladwell’s “10,000-hour” theory, then certifications falling into this range are legitimate professional level credentials. While the author does not necessarily share this belief, many popular, credible, and respected exam-based credentials do fall into this range. To put this range into perspective, with experience =>5 years, this is generally accepted as the criteria for an apprentice to move to become recognized and accepted as a journeyman<sup>17</sup> or for an intern to become a full-fledged practitioner. In the world of medicine, after a residency is completed, the training that is done after a residency (in a subspecialty) is usually called a “fellowship.” Certifications falling in this range indicate a practitioner who is or at least should be capable of working on his/her own with limited or minimal supervision. Unfortunately, only 22/105 = ~21% of the global certifications fall under this category, when “common sense” would indicate that given so many are trying to claim project management to be a “profession” that most of them should?

1	Rank Order based on PSCOR	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
2	Organizational Affiliation: Acronym of Credential:	PE LICENSE ABET	PMI PgMP	ACostE Incorporated	IIBA CBATL Level 4	IPMA USA A Level	PE LICENSE Non- ABET	GPC Advance w/MSc	GPC Expert w/MSc	AIPM-CPPE	GPM-m w/BS	AACE DRMP	GPC Advance w/BS	GPC Expert w/BS	GPM-m w/MSc / MBA	GPM-m w/PhD	GPC Advance w/PhD	GPC Expert w/PhD	AICE EIF Level 1	PMI PMP	ACostE Certified	AACE CFCC	GPC Fellow w/MSc /MBA	GPC Fellow w/PhD	GPC Fellow w BS/BA	INCOSE ESEP
18	TOTAL PSCOR SCORE	16207	17598	19492	20000	20024	20207	20836	20840	21217	21422	21855	21916	21920	22342	22502	22994	22996	25998	27598	29528	29598	31434	32594	33514	45220
19	RATIO TO ABET PE LICENSE	1.00	1.09	1.20	1.23	1.24	1.25	1.29	1.29	1.31	1.32	1.35	1.35	1.35	1.38	1.39	1.42	1.42	1.60	1.70	1.82	1.83	1.94	2.01	2.07	2.79
20	RATIO AGAINST GLADWELL	1.62	1.76	1.95	2.00	2.00	2.02	2.08	2.08	2.12	2.14	2.19	2.19	2.19	2.23	2.25	2.30	2.30	2.60	2.76	2.95	2.96	3.14	3.26	3.35	4.52
21	EXPERIENCE to TOTAL RATIO	0.62	0.68	0.72	1.00	1.00	0.69	0.62	0.62	0.75	0.75	0.73	0.73	0.73	0.67	0.44	0.43	0.43	0.77	0.80	0.81	0.81	0.76	0.61	0.84	0.88

Table 5- Certifications that Meet or Exceed ABET and/or Non-ABET PE license

As explained earlier, anyone graduating from a non-ABET accredited engineering school can still obtain their PE license by substituting more hours of experience in lieu of graduating from an ABET-accredited University. 23/105 = ~22% of the global project management related credentials fall within this category, which is great news as it not only provides plenty of options for the serious, truly professional level practitioner to choose from but also shows that there are many organizations who recognize that those providing training, consulting and “thought leadership” are able to benchmark themselves by obtaining these “best in class” credentials.

On a cautionary note, just because a person holds one of these credentials does not make them infallible. We need to heed the disclaimers used by those selling financial instruments that “past performance is no guarantee of future results.” But at least people who have invested 15,000 to 20,000 hours of their working lives more than likely know what they are talking about. These people are not “accidental” project managers but demonstrated by dedicating significant portions of their lives to mastering project management as it applies to their world that they are, in fact, “world-class” professionals.

For those organizations claiming their credentials are a “Gold Standard” if they do not fall into this category, consistent with the US “Truth in Advertising” laws, they need to provide proof backing up those claims. Under the US [Federal Trade Commission Act](#):

<sup>17</sup> Carpenter Union Apprenticeship Program- <https://www.carpenterslocal272.org/about-us/apprentice-program>

- “Advertising must be truthful and non-deceptive;”
- “Advertisers must have evidence to back up their claims; and”
- “Advertisements cannot be unfair.”

**ADDITIONAL or NEW CERTIFICATIONS BEING BENCHMARKED FOR 2020**

1	Rank Order based on PSCOR	104	98	96	94	93	92	91	89	88	85	84	83	80	76	71	70	66	65	61	58	48	44	39	30	29	28	26	21
2	Organizational Affiliation/ Acronym of Credential	IAPM CJPM	APM PFQ	GPC APP R	Coach ACC	APM PPQ	APM PMQ	CMA A CMIT	APM ChPP (Routes 1 and 2)	Coach PCC	TIA Project	TIA A+	Coach MCC	SCRUM A CSO	PE License EIT	SCRUM CSP- SM	APM PMQ	AAPM CIPM	AAPM MPS	GPC PRO F. w/IBA / RS	CMA A CMM	IAPM CSP M	APM PPQ	APM ChPP (Routes 1 and 2)	ICEA A CCEA	ICEAA CCEA P	SPC Specialist w/IBA / RS	PE LICENSE ABET	PE LICENSE Non-ABET
18	TOTAL PSCOR SCORE	1	104	155	240	278	283	304	519	866	2124	2125	2960	4037	5696	6173	6283	7256	7270	7635	8218	10001	10278	12519	15412	15444	15691	16207	20207
19	RATIO TO ABET PE LICENSE	0.00	0.01	0.01	0.01	0.02	0.02	0.02	0.03	0.05	0.13	0.13	0.18	0.25	0.35	0.38	0.39	0.45	0.45	0.47	0.51	0.62	0.63	0.77	0.95	0.95	0.97	1.00	1.25
20	RATIO AGAINST GLADWELL	0.00	0.01	0.02	0.02	0.03	0.03	0.03	0.05	0.09	0.21	0.21	0.30	0.40	0.57	0.62	0.63	0.73	0.73	0.76	0.82	1.00	1.03	1.25	1.54	1.54	1.57	1.62	2.02
21	EXPERIENCE to TOTAL RATIO	0.00	0.00	0.00	0.42	0.00	0.00	0.00	0.00	0.58	0.94	0.94	0.84	0.99	0.00	0.97	0.95	0.28	0.28	0.26	0.97	1.00	0.97	0.96	0.65	0.65	0.64	0.62	0.69

**Table 6- NEW/UPDATED Certifications for 2020**

There were 25 additional or updated certifications added for analysis and benchmarking for 2020. These were added either by request by one or more individuals or because they appear to be “popular,” judging by the number of people on Linked In who seem to be seeking them out. Unfortunately, 13 of 25 scores as SCAMS, not reaching or achieving the rather minimum requirements of the EIT designation; 6/26 scored as “Entry Level” or “Learner Permit” credentials leaving only 6 of them which scored >10,000 hours but <16,000 level of effort hours required to earn the ABET PE license. Again, this is NOT a good sign as everyone wants to claim that project management is a profession, and many of the professional societies want to claim their credentials are a “Gold Standard,” but it seems that despite the abysmal failure rates<sup>18</sup> of projects all around the world, few practitioners seem willing to challenge themselves to invest the level of effort it takes to become a professional in the same league as a Professional Engineer nor do those organizations purporting to represent these practitioners seem keen to “raise the bar” to legitimate professional levels?

Below is the individual assessment of the NEW additions along with an analysis of the strengths and weaknesses along with some suggestions as to how they could “raise the bar” of their certifications to more closely match the PE license standard.

<sup>18</sup> KPMG, AIPM and IPMA “The Future of Project Management” Global Outlook 2019” <https://www.ipma.world/assets/PM-Survey-FullReport-2019-FINAL.pdf>

**American Academy of Project Management- (AAPM)**

<http://americanacademyofprojectmanagement.com/certification.html>

The AAPM has a very professional looking website and offers more than 15 certifications; however, the only two that were assessed at this point were the CIPM © - Certified International Project Manager and the MPM © Master Project Manager. On the plus side, the AAPM appears to be a legitimate academic institute, with big names from Academia listed as “Advisors” or “Standard Board Members” however, as the organization does not award degrees, it looks more like a “certification mill” rather than a legitimate academic institute.

1	Rank Order based on PSCOR	76	66	65	25	20
2	Organizational Affiliation: Acronym of Credential:	PE License EIT	AAPM CIPM	AAPM MPS	PE LICENSE ABET	PE LICENSE Non- ABET
18	TOTAL PSCOR SCORE	5696	7256	7270	16207	20207
19	RATIO TO ABET PE LICENSE	0.35	0.45	0.45	1.00	1.25
20	RATIO AGAINST GLADWELL	0.57	0.73	0.73	1.62	2.02
21	EXPERIENCE to TOTAL RATIO	0.00	0.28	0.28	0.62	0.69

While the AAPM does require degrees as a prerequisite to their certifications, even though they exceed the EIT requirements, the two credentials analyzed fell woefully short on the total level of effort, with <7,300 LoE hours total and even worse on the requirement for documented and validated experience, which should be at a MINIMUM 60% of the total level of effort compared to only 28% for these two AAPM credentials. The recommendation of this author is “Caveat Emptor” if you wish to be a true professional, there are better options to consider.

**SCRUM Alliance**

<https://www.scrumalliance.org/get-certified>

With “agile” or “Agile” which is nothing more than a rebranding of the age-old “trial and error” or “Scientific Method” being all the rage, to get a sense of where the market is going the author included three Scrum credentials:

- 1) Certified ScrumMaster- (CSM)

1	Rank Order based on PSCOR	79	76	71	25	20
2	Organizational Affiliation: Acronym of Credential:	SCRUM A CSO	PE License EIT	SCRUM CSP-SM	PE LICENSE ABET	PE LICENSE Non- ABET
18	TOTAL PSCOR SCORE	4037	5696	6173	16207	20207
19	RATIO TO ABET PE LICENSE	0.25	0.35	0.38	1.00	1.25
20	RATIO AGAINST GLADWELL	0.40	0.57	0.62	1.62	2.02
21	EXPERIENCE to TOTAL RATIO	0.99	0.00	0.97	0.62	0.69

<https://www.scrumalliance.org/get-certified/scrum-master-track/certified-scrummaster>

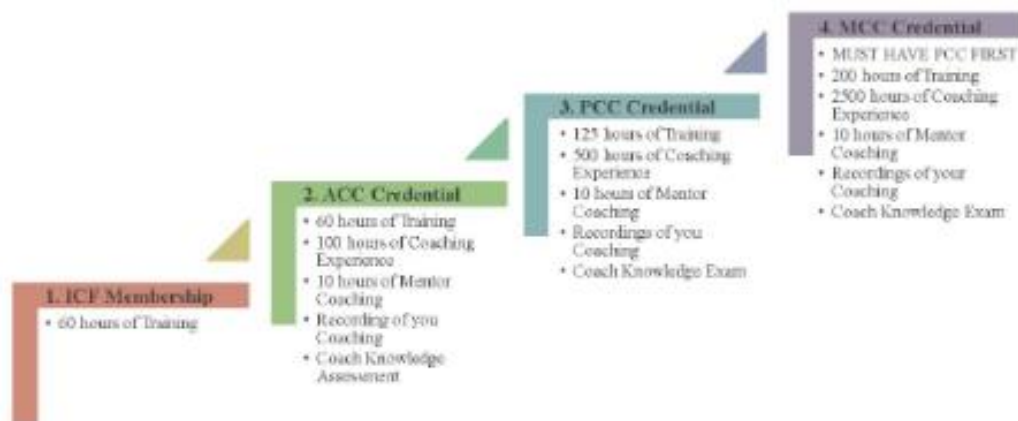
- 2) Advanced ScrumMaster- A-CSM <https://www.scrumalliance.org/get-certified/scrum-master-track/advanced-certified-scrummaster>
- 3) Certified ScrumMaster Professional- (CSP-SM) <https://www.scrumalliance.org/get-certified/scrum-master-track/certified-scrum-professional-scrummaster>

As the CSM requires NO experience at all, it was dropped from further consideration in this analysis leaving only the A-CSM, which requires 12 months (2000 hours) and CSP-SM, requiring only 24 months (4,000 hours. As such, the A-CSM credential does not meet the minimum criteria of the EIT (5,700 LoE hours), and the CSP-SM does exceed the EIT but falls 10,000 hours short of meeting the ABET PE license.

In order to make this family of credentials score higher, the SCRUM alliance either needs to add in the requirement of a degree (Bachelor, Masters and/or Ph.D.) or experience in lieu of a degree. But lacking more level of effort, both the CSM and A-CSM credentials both fall under the heading of SCAMS when benchmarked against Gladwell and the PE License, and the CSP-SM only qualifies as a “learners permit” level credential.

### **Coaching Certifications**

<https://www.coachnet.org/>



With a growing emphasis on the “soft” or “people” skills in project management, several individuals have asked to include a coaching credential in the analysis to see where they fit vis a vis other project credentials and as the ‘CoachNet’ credentials came up in several discussions and CoachNet is affiliated with Dr. Dan Harrison, Harrison Assessments who has collaborated with the author in creating a behavioral profile of “successful” project managers, <https://pmworldlibrary.net/wp-content/uploads/2013/01/PMWJ1-Jul2012-SecondEdition-GIAMMALVO-UsingBehavioralProfiling.pdf> the CoachNet family of 3 certifications was chosen to include.

To their credit, CoachNet has created one of the simplest and easiest to understand certification website with a very easy to understand and clear-cut progression showing what each level requires. All 3 levels of certification were included in this analysis:

- 1) Associate (ACC) <https://coachfederation.org/icf-credential/acc-paths>
- 2) Professional (PCC) <https://coachfederation.org/icf-credential/pcc-paths>
- 3) Master (MCC) <https://coachfederation.org/icf-credential/mcc-path>

Given that when we think of a “Coach” at least in the sporting sense, we think of a person not only with many years of experience and a solid track record of producing winning teams, but also an individual who holds a degree related to the field he or she is providing coachings in, such as exercise and sports science, physiology, kinesiology, nutrition and fitness, physical education, or sports medicine, etc. Thus, it is a shame that Coachnet did not require an underlying degree or more experience in lieu of a degree, as adding that requirement would move their credentials from being SCAMS into the realm of being legitimate credentials in this benchmarking model.

1	Rank Order based on PSCOR	95	89	84	76
2	Organizational Affiliation: Acronym of Credential:	Coach ACC	Coach PCC	Coach MCC	PE License EIT
18	TOTAL PSCOR SCORE	240	866	2960	5696
19	RATIO TO ABET PE LICENSE	0.01	0.05	0.18	0.35
20	RATIO AGAINST GLADWELL	0.02	0.09	0.30	0.57
21	EXPERIENCE to TOTAL RATIO	0.42	0.58	0.84	0.00

The author is recommending that CoachNet adds in the requirements for a degree which will raise their total level of effort score for their MCC by:

- 1) 5,200 LoE hours for a 4 year degree + 2,960 = 8,160 LoE hours
- 2) 1,920 LoE hours for a Masters degree + 8,160 = 10,080 LoE hours
- 3) 5,160 LoE hours for a Ph.D. + 10,080 = 15, 240 LoE hours

By simply adding the requirement for degrees to the existing model, will put the Coachnet MCC credential scoring very favorably against both Gladwell and the PE license and would probably raise the standing of their ACC and PCC as well.

### CompTIA Family of Credentials

<https://www.comptia.org/certifications>

The CompTIA offers 13 certifications and given many people who hold project management credentials also hold CompTIA credentials as well, and it was worth looking to see how those compare against our benchmarks.

The two CompTIA Credentials chosen for analysis were:

- 1) CompTIA A+- <https://www.comptia.org/certifications/a>
- 2) CompTIA Project- <https://www.comptia.org/certifications/project>

As the A+ is marketed as “industry standard for establishing a career in IT,” it should compare favorably to the EIT (FE Exam) and the Project credential should score >10,000 (Gladwell) and given that many if not most universities offering degrees in computer-related topics are ABET-accredited, their professional-level credentials should be scoring close to the ABET PE. As can be seen, the TIA credentials only require 37% of what the EIT requires.

While both the A+ and Project require 2000 hours of experience, which gives them a very favorable Experience to Total Ratio, their PSCOR (Total Level of Effort) does not even come close to the ABET EIT (FE Exam) requirements. As 2000 hours translates to only a full year of experience, CompTIA should consider increasing that as well as recognizing degrees (Bachelors, Masters, or Ph.D.) or more experience in lieu of a degree. To be a truly professional level credential, they need to get the total PSCOR >10,000 and preferably closer to 16,000 LoE hours.

1	Rank Order based on PSCOR	86	85	76
2	Organizational Affiliation: Acronym of Credential:	TIA Project	TIA A+	PE License EIT
18	TOTAL PSCOR SCORE	2124	2125	5696
19	RATIO TO ABET PE LICENSE	0.13	0.13	0.35
20	RATIO AGAINST GLADWELL	0.21	0.21	0.57
21	EXPERIENCE to TOTAL RATIO	0.94	0.94	0.00

**Construction Management of America (CMAA)**

<https://www.cmaanet.org/certification/ccm>

Certified Construction Manager in Training (CMIT)- <https://www.cmaanet.org/sites/default/files/2019-08/CMIT-Applicationv20080119-Editable.pdf>

Certified Construction Manager (CCM) <https://www.cmaanet.org/sites/default/files/2019-03/CCM-Application%20022319.pdf>

Given that “Construction Project Management” is arguably enough, one of the most mature of the project management disciplines, dating back 5000 years or more to the pyramids and other wonders of the ancient world, and given that the “parents” of construction project management are both recognized as highly respected professions- architecture and engineering, one would reasonably expect that CMAA has looked to the process followed by both the architecture and engineering professions to design their certification program?

CMAA starts off by offering a Construction Manager in Training (CMIT), which is at least in theory, comparable to the Engineer in Training and the Certified Construction Manager (CCM), which should be the equivalent to the ABET PE. However, as we can see from the PSCOR (total level of effort), the CMAA CMIT does not even come close to being equal to the EIT. This is very disappointing as the CMAA was aware of this research going back many years.

The same with the CMM. While it exceeds the requirements of the EIT, with a Level of Effort score of 8,218 hours, it is a bit over HALF the level of effort required to earn an ABET PE and 40% of the level of effort required to earn a non-ABET PE, putting it in the category of “learner permit” credentials, not even into the “apprentice” or “journeyman” levels.

While for the CMM, CMAA requires 48 months (8,000) hours of experience, they allow people to count their degrees as PART of those 8000 hours. For CMAA to bring their credentials closer to meeting the PE license criteria, they need to require 48 months PLUS a degree, understanding that by adding in the requirements for a degree (or more experience in lieu of a degree) will raise their total level of effort score for the CMM by:

- 1) 5,200 LoE hours for a 4 year degree + 8,218 = 13,418
- 2) 1,920 LoE hours for a Masters degree + 13,418 = 15,338
- 3) 5,160 LoE hours for a Ph.D. + 15,338 = 20,497

IF CMAA makes this change, it will clearly put their CMM certifications with a PH.D. amongst the top in the world. As they are claiming their credentials to be a “Gold Standard,” then these are the changes they need to make to back up their claims.

Unfortunately, even though CMAA publishes a handbook for each credential, it is very difficult to clearly identify what are the requirements and it would help them to market if they were more clear in summarizing the requirements along the lines of what Coach-Net has done or better yet, model their information page along the lines of what the National Society of Professional Engineers publishes.

<https://www.nspe.org/resources/licensure/what-pe>

**International Association of Project Managers (IAPM)**

<https://www.iapm.net/en/certification/overview/>

1	Rank Order based on PSCOR	92	76	58	25	20
2	Organizational Affiliation: Acronym of Credential:	CMAA CMIT	PE License EIT	CMAA CMM	PE LICENSE ABET	PE LICENSE Non- ABET
18	TOTAL PSCOR SCORE	304	5696	8218	16207	20207
19	RATIO TO ABET PE LICENSE	0.02	0.35	0.51	1.00	1.25
20	RATIO AGAINST GLADWELL	0.03	0.57	0.82	1.62	2.02
21	EXPERIENCE to TOTAL RATIO	0.00	0.00	0.97	0.62	0.69

The IAPM offers a total of 7 credentials, but for the purposes of this analysis, the paper ignored the Agile track and focused on the project manager track, which consists of:

- 1) Junior Project Manager-

1	<b>Rank Order based on PSCOR</b>	105	102	76	47	46	25	20
2	<b>Organizational Affiliation: Acronym of Credential:</b>	IAPM CJPM	IAPM CPM	PE License EIT	IAPM CSPM	IAPM CIPM	PE LICENSE ABET	PE LICENSE Non- ABET
18	<b>TOTAL PSCOR SCORE</b>	1	62	5696	10001	10002	16207	20207
19	<b>RATIO TO ABET PE LICENSE</b>	0.00	0.00	0.35	0.62	0.62	1.00	1.25
20	<b>RATIO AGAINST GLADWELL</b>	0.00	0.01	0.57	1.00	1.00	1.62	2.02
21	<b>EXPERIENCE to TOTAL RATIO</b>	0.00	0.00	0.00	1.00	1.00	0.62	0.69

<https://www.iapm.net/en/certification/levels-of-certification/certified-junior-project-manager-iapm/>

- 2) Project Manager- <https://www.iapm.net/en/certification/levels-of-certification/certified-project-manager-iapm/>
- 3) Senior Project Manager- <https://www.iapm.net/en/certification/levels-of-certification/certified-senior-project-manager-iapm/>
- 4) International Project Manager- <https://www.iapm.net/en/certification/levels-of-certification/certified-international-project-manager-iapm/>

Of the IAPM credentials, the only one that requires documented and validated experience is the Senior Project Manager (CSCPM) however, because the International Project Manager (CIPM) require you obtain the Senior PM first, the two are essentially the same requirements, other than the International PM requires an additional 1-hour exam.

As none of these credentials either require nor recognize the need for a degree, the scores remain low; however, even the exams are short duration with very simple questions, indicating these credentials are probably not designed for the serious professional, only those seeking to add initials after their names.

The IAPM would be wise to consider adding degree requirements and modifying the experience requirements to spread their credentials out to better match what a career path progression might look like. Similar to that followed by the Guild of Project Controls, with a new certification every 5-7 years? IF the organization is serious about supporting project management being a profession, they also should be benchmarking their entry-level credentials against the EIT’s FE Exam requirements.<sup>19</sup>

**International Cost Estimating and Analysis Association**

<http://www.iceaaonline.com/certification/>

The ICEAA has developed a robust competency assessment model consisting of 3 levels of certification

<sup>19</sup> The National Council of Examiners for Engineering and Surveying (NCEES) <https://ncees.org/engineering/fe/>



- 1) “Professional Cost Estimator/Analyst (PCEA®), an apprentice-level certification to practitioners having at least two years of experience and a college degree (or equivalent experience).”
- 2) “Certified Cost Estimator/Analyst (CCEA®), our primary professional designation to practitioners having at least five years of experience and a college degree (or equivalent experience).”
- 3) “Certified Cost Estimator/Analyst–Parametric (CCEA®-P), a specialty designation for practitioners already possessing a current CCEA® and seeking recognition for mastering parametric methods.”

1	Rank Order based on PSCOR	76	53	29	28	25	20
2	Organizational Affiliation: Acronym of Credential:	PE License EIT	ICEAA PCEA	ICEAA CCEA	ICEAA CCEA-P	PE LICENSE ABET	PE LICENSE Non- ABET
18	TOTAL PSCOR SCORE	5696	9394	15412	15444	16207	20207
19	RATIO TO ABET PE LICENSE	0.35	0.58	0.95	0.95	1.00	1.25
20	RATIO AGAINST GLADWELL	0.57	0.94	1.54	1.54	1.62	2.02
21	EXPERIENCE to TOTAL RATIO	0.00	0.43	0.65	0.65	0.62	0.69

The ICEAA model consists of both academic accomplishments and documented and validated hands-on experience, which is reflected in the scores shown. The PCEA, which is the apprentice or entry-level EXCEEDS, the EIT requirements but falls short of Gladwell’s 10,000 hours which is appropriate for an apprentice or intern program, while the CCEA and CCEA-P score very close to the ABET PE. The only recommendation the author would make to ICEAA would be to consider either add another level of credential that EXCEEDS the ABET PE? Or perhaps simply increase the experience requirements for the CCEA-P to put it >16,500 level of effort hours?

**UPDATES to PREVIOUSLY ANALYZED CREDENTIALS**

On the 10<sup>th</sup> Anniversary of this research, we have UPDATED credentials previously reviewed based on known or proposed changes they have made or are planning to make to their credentials (In alphabetical order)

- 1) APM/APMG
- 2) Axelos PRINCE2/ITIL
- 3) Guild of Project Controls
- 4) Project Management Institute (PMI)

**APM/APMG**

Given that APM/APMG was able to lobby the Privy Council to grant “Royal Chartered” status to project management, thus at least theoretically making project management a profession, when the author first analyzed the APM family of credentials back in 2016<sup>20</sup>, due to incomprehensible documentation it was impossible to figure out what the requirements were and they were graded as being SCAMS.

<sup>20</sup> Giammalvo, Paul D (2016) 3<sup>rd</sup> Update <https://pmworldlibrary.net/wp-content/uploads/2016/12/pmwj53-Dec2016-Giammalvo-Certification-Benchmarking-2016-update-featured-paper.pdf>

There is good news and bad news. The good news is, the documentation has improved. The bad news is it is still not clear whether they are legitimate credentials, or are they still SCAMS?

Here is the problem.

RESOURCES MEMBERSHIP CHARTERED STANDARD QUALIFICATIONS AND TRAINING JOBS AND CAREERS NEWS AND OPINION COMMUNITY EVENTS BOOKS

### Qualifications

The range of qualifications developed by APM, the chartered body for the project profession, offers a progressive structure for your career development, incorporating a mix of tools, techniques, processes and skills.

Qualification	Experience Requirement	Action
APM Project Fundamentals Qualification (PFQ)	0-2 years experience	<a href="#">VIEW PFQ &gt;</a>
APM Project Management Qualification (PMQ)	3-4 years experience	<a href="#">VIEW PMQ &gt;</a>
APM Project Professional Qualification (PPQ)	5-6 years experience	<a href="#">VIEW PPQ &gt;</a>

While the graphic above clearly shows experience requirements, when you go to see the details, what is NOT CLEAR yet is whether the experience is actually documented and validated or whether the credentials were designed for practitioners who fall between these ranges but do not require that the experience be documented and validated as an integral part of the credentialing process.

For the purposes of this analysis, until such time as this issue has been clarified, the report will continue to list the APM/APMG credentials as SCAMS. Why? As can be seen below, without the documented and validated experience requirements being a required part of the credentialing process, none of the credentials even come close to the EIT level of effort.

1	Rank Order based on PSCOR	101	99	94	93	90	76	70	43	38	25	20
2	Organizational Affiliation: Acronym of Credential:	APM PFQ	APM PFQ	APM PPQ	APM PMQ	APM ChPP (Routes 1 and 2)	PE License EIT	APM PMQ	APM PPQ	APM ChPP (Routes 1 and 2)	PE LICENSE ABET	PE LICENSE Non-ABET
18	TOTAL PSCOR SCORE	82	104	278	283	519	5696	6283	10278	12519	16207	20207
19	RATIO TO ABET PE LICENSE	0.01	0.01	0.02	0.02	0.03	0.35	0.39	0.63	0.77	1.00	1.25
20	RATIO AGAINST GLADWELL	0.01	0.01	0.03	0.03	0.05	0.57	0.63	1.03	1.25	1.62	2.02
21	EXPERIENCE to TOTAL RATIO	0.00	0.00	0.00	0.00	0.00	0.00	0.95	0.97	0.96	0.62	0.69

Looking at the two scenarios, if the experience is NOT a formal part of the credentialing process, then all four credentials (PFQ, PMQ, PPQ, and the ChPP) are scams. Why? Because none of them meet the level of effort required to earn the EIT designation. HOWEVER, even if the experience requirements ARE part of the credentialing process, requiring documentation and validation, then the PFQ credential remains a SCAM. Under the second scenario, where the experience documentation and validation is a formal component of the credentialing process, the PMQ (#70) then becomes a legitimate ENTRY LEVEL (apprentice or internship) level credential that exceeds the EIT requirements but falls short of Gladwell’s “10,000-hour” rule. Likewise, the PPQ (#43) exceeds Gladwell’s “10,000 hours” (barely), making it a legitimate “Journey person” or “Fellowship” level credential. The problem becomes with the ChPP. (#38) Given that APM/APMG is claiming project management to be a profession, based on having received Royal Chartered status, then why is that their premier credential, with only 12,519 LoE hours, does not meet or exceed the 16,207 required to earn the ABET PE license? Wouldn’t you think that APM/APMG would strive to validate their professional level credential by benchmarking it against other recognized professional level credentials?

The recommendation to APM/APMG is given you are claiming project management to be a profession, then you really need to benchmark your credentials against each level of the Professional Engineer (PE) licensing process in terms of both experience and educational requirements, and you should be on solid ground that your credentials are legitimate to validate professional competency. IF you do not want to use the US PE license, then the least you need to do is benchmark your process and the requirements against recognized professions. Just claiming project management to be a profession with nothing to back it up is both a questionable ethical as well as a potential legal issue.<sup>21, 22</sup>

<sup>21</sup> US Federal Trade Commission Truth in Advertising Laws <https://www.ftc.gov/tips-advice/business-center/guidance/advertising-facts-guide-small-business>

<sup>22</sup> Misrepresentations Act of 1967- <https://www.which.co.uk/consumer-rights/regulation/misrepresentation-act-1967>

## AXELOS

<https://www.axelos.com/certifications>

The only certifications that have been previously benchmarked in this research are Prince2 Foundation and Practitioner as well as ITIL Expert and ITIL Master.

The only discernible differences are that now Axelos requires as a PREREQUISITE to sit for the “PRINCE2 Practitioner exam, you must be able to provide proof of passing one of the following exams:”

1	Rank Order based on PSCOR	104	96	91	76	42	25	20
2	Organizational Affiliation: Acronym of Credential:	AXELOS PRINCE2 Foundation	AXELOS PRINCE2 Practitioner	AXELOS ITIL XPERT	PE License EIT	AXELOS ITIL MASTER	PE LICENSE ABET	PE LICENSE Non- ABET
18	TOTAL PSCOR SCORE	20	155	364	5696	10388	16207	20207
19	RATIO TO ABET PE LICENSE	0.00	0.01	0.02	0.35	0.64	1.00	1.25
20	RATIO AGAINST GLADWELL	0.00	0.02	0.04	0.57	1.04	1.62	2.02
21	EXPERIENCE to TOTAL RATIO	0.00	0.00	0.00	0.00	0.96	0.62	0.69

- PRINCE2 Foundation
- Project Management Professional (PMP)
- Certified Associate in Project Management (CAPM)
- IPMA Level A (Certified Projects Director)
- IPMA Level B (Certified Senior Project Manager)
- IPMA Level C (Certified Project Manager)
- IPMA Level D (Certified Project Management Associate)’”

Regardless of this requirement, the PRINCE2 family, despite the popularity, is definitely NOT a professional-level credential. Especially when the prerequisite credentials themselves (PRINCE2 Foundation, CAPM, IPMA Level D) do not even meet the minimum requirements of the EIT and even the PMP does not quite meet Gladwell’s “10,000 rule”.

The best recommendation for the Axelos people would be to forget trying to “piggyback” your credentials with others, and simply benchmark your exams against those of the EIT and start there. “The FE exam includes 110-questions. The exam appointment time is 6 hours long and includes:<sup>23</sup>

- Nondisclosure agreement (2 minutes)
- Tutorial (8 minutes)
- Exam (5 hours and 20 minutes)
- Scheduled break (25 minutes)
- Learn more at the [NCEES YouTube channel](https://www.ncees.org/engineering/fe/).”

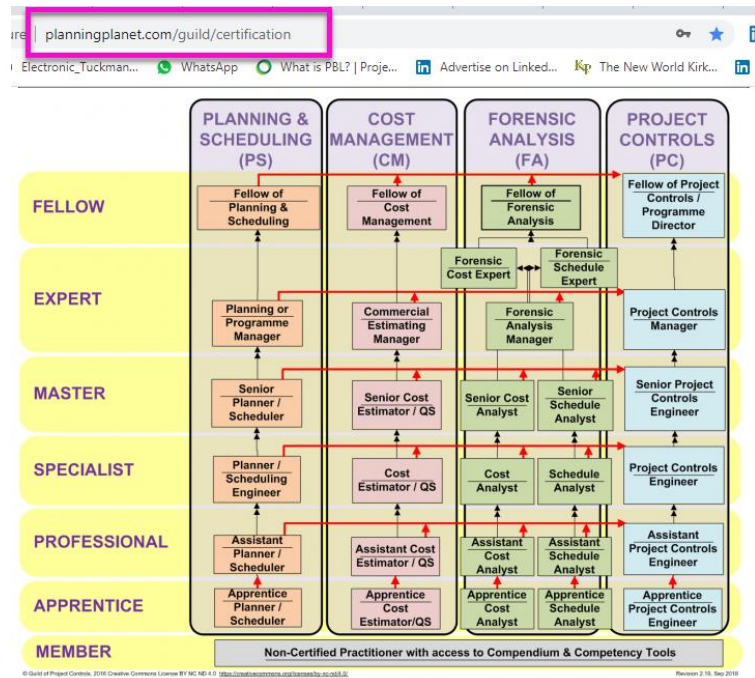
Once you get your basic credentials to meet or exceed EIT requirements, it will provide the foundation for the more advanced credentials, understanding that if your credentials cannot stand on their own, then they probably are not adding any value to the practice of project management.

<sup>23</sup> Fundamentals of Engineering Exam (FE) <https://ncees.org/engineering/fe/>

**GUILD of PROJECT CONTROLS (GPC)**

<http://www.planningplanet.com/guild/certification>

When first conceived, the Guild created a very robust and very credible 5 level, 4 track competency-based credentials that matched a typical career path development plan, with a new level of certification every 5-7 years. However, somewhere along the way, they seemed to have succumbed to those who want to dumb things down and made changes to the lower level credentials making them less stringent and following the lead of PMI and other professional societies in making blatantly false and misleading claims by portraying their credentials as validating something they do not.



While the Guild has 9 credentials that EXCEED the requirements of the ABET and non-ABET PE license, as those remain unchanged, there are no problems with them. The real concerns are at the lower end of the competency assessment spectrum. These upper-level Guild credentials remain as some of the highest in the industry, exceeding both the ABET and non-ABET requirements.

Rank Order based on PSCOR	98	77	62	28	26	21	20	19	16	14	13	10	9	4	3	2
Organizational Affiliation: Acronym of Credential:	GPC APPR	PE License EIT	GPC PROF. w/BA/BS	GPC Specialist w/BA/BS	PE LICENS E ABET	PE LICENS E Non-ABET	GPC Advance w/MSc	GPC Expert w/MSc	GPC Master w/BA/BS	GPC Advance w/BS	GPC Expert w/BS	GPC Advance w/PhD	GPC Expert w/PhD	GPC Fellow w/MSc /MBA	GPC Fellow w/PhD	GPC Fellow w/BS/BA
TOTAL PSCOR SCORE	155	5696	7635	15691	16207	20207	20836	20840	21691	21916	21920	22994	22996	31434	32594	33514
RATIO TO ABET PE LICENSE	0.01	0.32	0.43	0.89	1.00	1.15	1.18	1.18	1.23	1.25	1.25	1.31	1.31	1.79	1.85	1.90
RATIO AGAINST GLADWELL	0.02	0.57	0.76	1.57	1.62	2.02	2.08	2.08	2.17	2.19	2.19	2.30	2.30	3.14	3.26	3.35
EXPERIENCE to TOTAL RATIO	0.00	0.00	0.26	0.64	0.62	0.69	0.62	0.62	0.74	0.73	0.73	0.43	0.43	0.76	0.61	0.84

The Guild ADDED another level, now called "Apprentice," which, because it fails to meet the requirements of the EIT, is just another SCAM. A "cash cow" supposedly to entice people to want to join the program. For that reason, it should be deleted.

At the same time, what once was the original Apprentice level (#61) got renamed the PROFESSIONAL level, which is a lie. There is no way that a person with only 2000 hours of experience can legitimately be called a "professional." This level was and remained the "Learner Permit" level, where those falling in that range are known as "apprentices" or "interns." What was originally called the Professional level (#28)

got renamed “Specialist,” which makes absolutely no sense as it is the tracks (i.e., PS, CM, FA, or PC) that determine what the specialty is?

The Guild needs to go back to what was originally designed and stop trying to entice people by dumbing down what was originally a model competency assessment based on the ILO’s “Regional Competency Standards for Construction” [https://www.ilo.org/asia/publications/WCMS\\_370561/lang--en/index.htm](https://www.ilo.org/asia/publications/WCMS_370561/lang--en/index.htm)

## **PROJECT MANAGEMENT INSTITUTE (PMI)**

<https://www.pmi.org/certifications>

This research project was initially undertaken 10 years ago specifically because PMI was making claims about their credentials, which were patently false and misleading, specifically that the PMP was the “Gold Standard” and that it “validated competence.” This was 10 years ago, and PMI is still making these blatantly false and misleading claims despite having yet to provide any proof to back up these claims as required by US “Truth in Advertising” laws.<sup>24</sup>

For more on this topic, see this Linked In article by Lee Lambert, one of the founding fathers of the PMP <https://www.linkedin.com/pulse/pmp-pmp-that-question-lee-r-lambert/> and to see the essence of the US Federal Trade Commission Act <https://www.ftc.gov/tips-advice/business-center/guidance/advertising-faqs-guide-small-business>

Anyway, with PMI in the process of totally revamping their credentialing processes, now is a good time for the MEMBER/OWNERS of PMI to take a long hard look at where PMI’s 8 credentials stand vis a vis Gladwell and the PE Licensing Process.

- 1) Project Management Professional (PMP) <https://www.pmi.org/certifications/types/project-management-pmp>
- 2) Program Management Professional (PgMP) <https://www.pmi.org/certifications/types/program-management-pgmp>
- 3) Portfolio Management Professional (PfMP) <https://www.pmi.org/certifications/types/portfolio-management-pfmp>
- 4) Certified Associate in Project Management (CAPM) <https://www.pmi.org/certifications/types/certified-associate-capm>
- 5) PMI Professional in Business Analysis (PMI-PBA) <https://www.pmi.org/certifications/types/business-analysis-pba>
- 6) PMI Agile Certified Practitioner (PMI-ACP) <https://www.pmi.org/certifications/types/agile-acp>
- 7) PMI Risk Management Professional (PMI-RMP) <https://www.pmi.org/certifications/types/risk-management-rmp>

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<sup>24</sup> <sup>24</sup> US Federal Trade Commission Truth in Advertising Laws <https://www.ftc.gov/tips-advice/business-center/guidance/advertising-faqs-guide-small-business>

8) PMI Scheduling Professional (PMI-SP) <https://www.pmi.org/certifications/types/scheduling-sp>

1	Rank Order based on PSCOR	89	83	77	58	57	50	49	26	25	21	7
2	Organizational Affiliation: Acronym of Credential:	PMI CAPM	PMI-ACP	PE License EIT	PMI-RP	PMI-SP	PMI-PBA	PMI-PMP	PE LICENS E ABET	PMI PgMP	PE LICENS E Non-ABET	PMI PfMP
18	TOTAL PSCOR SCORE	1649	4688	5696	8417	8917	9888	9908	16207	17598	20207	27598
19	RATIO TO ABET PE LICENSE	0.09	0.27	0.32	0.48	0.51	0.56	0.56	1.00	1.00	1.15	1.57
20	RATIO AGAINST GLADWELL	0.16	0.47	0.57	0.84	0.89	0.99	0.99	1.62	1.76	2.02	2.76
21	EXPERIENCE to TOTAL RATIO	0.91	0.96	0.00	0.36	0.39	0.46	0.45	0.62	0.68	0.69	0.80

Based on this benchmarking analysis, both the CAPM and ACP qualify as SCAMS as neither of them meets or exceeds the EIT/FE Exam requirements, which include a 4-year degree or equivalent LoE hours. “The FE exam includes 110-questions. The exam appointment time is 6 hours long and includes: <https://ncees.org/engineering/fe/>

- Nondisclosure agreement (2 minutes)
- Tutorial (8 minutes)
- Exam (5 hours and 20 minutes)
- Scheduled break (25 minutes)
- Learn more at the [NCEES YouTube channel](#).”

The Risk (PMI-RP), Scheduling (PMI-SP), Business Analyst (PMI-PBA), and PMP are all “learner permit” level credentials, not even qualifying at apprentice/intern level credentials as they fail to meet or exceed Gladwell’s “10,000 level of effort hours” standard. To move them up PMI will have to come up with some combination of work experience, more training and/or more complex examinations (See FE<sup>25</sup> and PE<sup>26</sup> exam requirements) to get the PSCOR to be >10,000 LoE hours which will make them legitimate professional level credentials equivalent to a Journeyman or Fellowship level practitioner. The PgMP and the PfMP are fine as they are and don’t need any major adjustments.

Failing moving them up, PMI really should not be labeling them with the term “professional,” as that is a lie as they do not meet any credible professional standards, and the only two PMI credentials that come close to qualifying as a “Gold Standard” are the PgMP and PfMP credentials.

<sup>25</sup> Fundamentals of Engineering Exam (FE) <https://ncees.org/engineering/fe/>

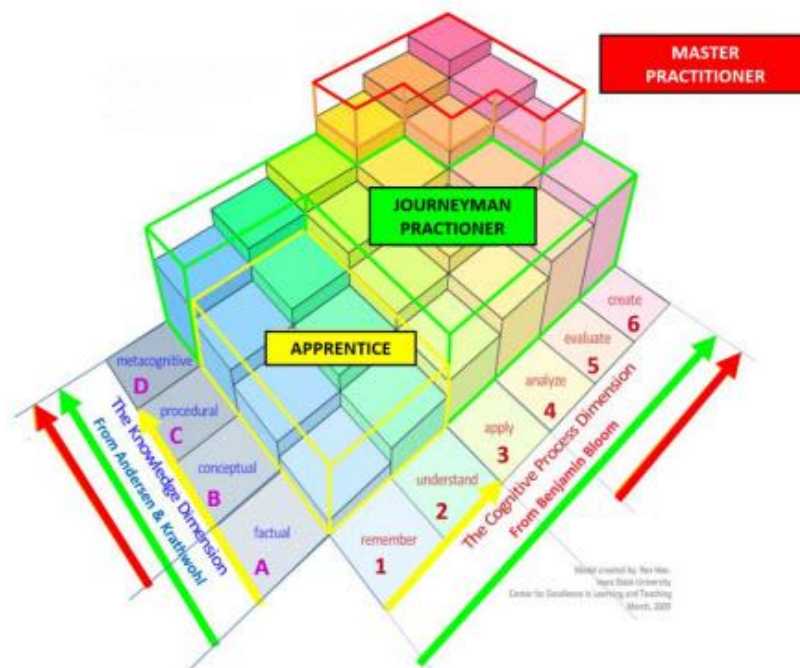
<sup>26</sup> The National Council of Examiners for Engineering and Surveying (NCEES) <https://ncees.org/engineering/pe/>

## CONCLUSIONS AND RECOMMENDATIONS

It is patently clear that project management is simply not consistently delivering the “benefits” it can or should. Part of this problem is for the past 50 – 60 years, practitioners have deluded ourselves into believing that project management is a “profession” for no other reason than we want the prestige and respect that goes with being a “professional” something.

Given that respect, like trust, cannot be demanded or expected, but must be EARNED, here are the recommendations this author offers to begin to earn the trust of the consuming public and, in doing so, earn their respect which hopefully raises the image of project management to be more of a profession.

- 1) IF we want to be respected as professionals, then our credentialing process MUST be consistent with other professions. As Engineering is one of the oldest and more mature users of the project management processes as an asset delivery system, we need to benchmark our academic and credentialing processes to match:
  - a. Here is a typical Construction Project Management Degree program [http://catalog.purdue.edu/preview\\_program.php?catoid=8&poid=10141](http://catalog.purdue.edu/preview_program.php?catoid=8&poid=10141)
  - b. Here is the information on the Fundamentals of Engineering Exam (FE) <https://ncees.org/engineering/fe/>
  - c. Here is the information on the National Council of Examiners for Engineering and Surveying (NCEES) Professional Engineer Exam <https://ncees.org/engineering/pe/>
- 2) All training developed must be based on progressive levels of competency that match as closely as possible what a typical career path development plan would look like.



<sup>6</sup> Anderson, L.W. (Ed.), Krathwohl, D.R. (Ed.), Airasian, P.W., Cruikshank, K.A., Mayer, R.E., Pintrich, P.R., Raths, J., & Wittrock, M.C. (2001). A taxonomy for learning, teaching, and assessing: A revision of Bloom's Taxonomy of Educational Objectives (Complete edition). New York: Longman.



The author highly recommends using the Iowa State University’s “Center for Excellence in Learning and Teaching” <http://www.celt.iastate.edu/teaching/effective-teaching-practices/revise-blooms-taxonomy-flash-version/> as the basis to develop the CONTENT that needs to be included in each level of certification.

- 3) Start to use INDEPENDENT, CREDIBLE, RESEARCH-BASED data to determine what employers are SEEKING in the people they HIRE and PROMOTE and start to design and deliver courses that DEVELOP and certifications that VALIDATE those traits or attributes. Since 1956, the National Association for Colleges and Employers <https://www.naceweb.org/about-us/> has been publishing this data. IF our training and certification programs fail to validate what the marketplace is seeking, then what good are they? Pay close attention to the GAP ANALYSIS shown below.

COMPETENCIES	CONSIDERED ESSENTIAL*	RATED PROFICIENT**
Teamwork/Collaboration	97.5%	77.0%
Digital Technology	64.2%	65.8%
Critical Thinking/Problem Solving	99.2%	55.8%
Professionalism/Work Ethic	100%	42.5%
Oral/Written Communications	95.9%	41.6%
Leadership	68.6%	33.0%
Global/Multi-Cultural Fluency	31.1%	20.7%
Career Management	47.1%	17.3%

Source: *Job Outlook 2018*, National Association of Colleges and Employers. \* The percentages corresponding to “considered essential” represent, among all responding employers, the percentage who, on a five-point scale, indicated that the respective competency was either “essential” (4) or “absolutely essential” (5) for college graduates to enter their work force. \*\*The percentages corresponding to “rated proficient” represent, among all responding employers, the percentage who, on a five-point scale, rated recent graduates either “very” (4) or “extremely” (5) proficient in the respective competency.

From NACE Research- <https://www.naceweb.org/career-readiness/competencies/employers-rate-career-competencies-new-hire-proficiency/>

These GAPS represent an OPPORTUNITY for training providers and those developing CERTIFICATIONS. GIVEN these are the skills the marketplace is demanding, and GIVEN they are clearly not getting what they need/want, we need to design these skills into our training programs and validate competency by RESULTS via our certification programs.

#### 4) Adopt PROJECT-BASED LEARNING ATTRIBUTES.

It is incomprehensible to think that ANY professional society representing project management practitioners could begin to advocate any training programs that are not fully compliant with the 7 attributes of “Project-Based Learning.” <https://www.pblworks.org/what-is-pbl/gold-standard-project-design> The hypocrisy that many of the project management societies’ exhibit is bad enough without adding insult to injury by NOT requiring EVERYONE providing training in support of their credentials to adopt the 7 attributes of project-based learning in their courses and then use those 7 attributes as the basis to evaluate the effectiveness of those providing training.

Note that many of the same elements or attributes identified by the NACE research are also addressed in the Project-Based Learning design elements?



#### 5) Measure the effectiveness of training providers

Not only do we need to measure the EFFECTIVENESS of training providers based on their RESULTS, but we also need to measure and evaluate the credentials developed and offered based not on the popularity of the training provider/mentor or on the marketing efforts of the organization but based on the RESULTS those who hold those credentials deliver. Meaning that consistent with the belief “that which gets measured gets done” training providers should be evaluated by what the graduates of their programs can and do APPLY what they have learned and that those who hold the credentials consistently produce more “successful” project outcomes. If they cannot, then the credibility and “added value” of the credential itself have to be challenged.

For TRAINING PROVIDERS, you need to be adopting the 4 Level Kirkpatrick Method <https://www.kirkpatrickpartners.com/Our-Philosophy/The-New-World-Kirkpatrick-Model>



As professional societies, IF you cannot show that those who hold your certifications can and do produce positive results, then how can ethically, if not legally, justify or support any claims that project management is a profession?

For professional societies, you should be using the 4 Level Kirkpatrick model as the basis to train, develop, and evaluate your training providers. As they are the front line of your organization's products, the training providers are your best form of advertising.

## 6) Adopt MODEL Code of Ethics and Professionalism-

In the NACE survey, the largest gap occurred in the area of Professionalism and Work Ethics. Yet many of the professional societies are notorious for violating the intent, if not the letter of the various "Truth in Advertising" laws. IF the professional organizations that purport to represent us do not exemplify the Codes of Ethics and Codes of Conduct they developed, then how can they possibly expect their members to do so?

For over 10 years now, Glenn Butts from NASA and Prof. Bent Flyvbjerg have not only identified the "root cause" problems underlying why projects continue to fail with such alarming regularity but have proposed SOLUTIONS to those problems. How much longer is it going to take organizations such as PMI, IPMA, AACE, and APM/APMG to follow the lead of the Guild of Project Controls, making it an ETHICAL violation for project SPONSORS, project MANAGERS and project CONTROLLERS/PMO teams to knowingly accept "death march" projects?

*Code of  
Professional Ethics*  
*for*  
COMPLIANCE AND ETHICS  
PROFESSIONALS



Pay close attention to paragraph R1.4, where the SCCE Model Code of Ethics requires:<sup>27</sup>

<sup>27</sup> Code of Professional Ethics for Compliance and Ethics .... <https://compliancecosmos.org/code-professional-ethics-compliance-and-ethics-professionals>

*“If in the course of their work, project team members become aware of any decision by their employing organization which, if implemented, would constitute misconduct, the professional shall:*

- (a) refuse to consent to the decision;*
- (b) escalate the matter, including to the highest governing body, as appropriate;*
- c) if serious issues remain unresolved after exercising “a” and “b,” consider resignation; and*
- (d) report the decision to public officials when required by law.”*

*SCCE Commentary:*

*“The duty of a project management professional goes beyond the duty to the employing organization, 4 [www.corporatecompliance.org](http://www.corporatecompliance.org), inasmuch as his/her duty to the public and to the profession includes prevention of organizational misconduct. The project professional should exhaust all internal means available to deter his/ her employing organization, its employees, and agents from engaging in misconduct. The PROJECT MANAGEMENT PROFESSIONAL should escalate matters to the highest governing body as appropriate, including whenever: a) directed to do so by that body, e.g., by a board resolution; b) escalation to management has proved ineffective, or c) the PROJECT MANAGEMENT PROFESSIONAL believes escalation to management would be futile. PROJECT SPONSOR, PROJECT MANAGERS, or PROJECT CONTROLLERS/PMO’s should consider resignation only as a last resort, since PROJECT MANAGERS may be the only remaining barrier to misconduct. A letter of resignation should set forth to senior management and the highest governing body of the employing organization in full detail and with complete candor all the conditions that necessitate his/her action. In complex organizations, the highest governing body may be the highest governing body of a parent corporation.”*

## 7) Address ROOT CAUSE PROBLEMS

With the move towards the use of AI, Modularization, Automation, and E-Commerce, unless we FIRST fix the root causes of so many projects running late, over budget, failing to meet technical requirements much less delivering the benefits for which they were undertaken, NOW is the time to address these problems BEFORE we start to seriously automate the project management processes.

Ten years ago, Glenn Butts, Lead Estimator for NASA, <https://www.linkedin.com/in/glenn-butts-56523035/> published a scathing rebuke of NASA’s cost estimating and scheduling practices. <http://www.build-project-management-competency.com/wp-content/uploads/2010/09/Glenn.Butts-Mega-Projects-Estimates.pdf> As a senior practitioner, not only did he identify the root cause problems, but he also provided RECOMMENDATIONS as to how to FIX these problems. This was over 10 years ago, and STILL, none of the professional

societies much less the US Government implemented his recommendations. Why not? Do we or do we NOT believe in the importance of “Lessons Learned.”

**How Do We Underestimate?**  
- Let Me Count The Ways -

1. **OMIT PROBABLE SCOPE** from estimate
2. **OMIT POSSIBLE RISKS** from analysis
  - Internal & External
3. **UNREALISTIC, OPTIMISTIC assumptions**
4. **Use historically LOW ESCALATION** projections
  - RAND Study – Reason for 11.2% of Cost Growth
5. **Issue cost estimates in BASE YEAR** dollars
  - Estimates should be in then year dollars (escalated to year in which it is spent)
6. **Many estimates NOT PREPARED BY A BONA FIDE ESTIMATOR**
  - Everyone's a estimator
  - Being certified no guarantee of having necessary experience
7. **REWARD failure, PUNISH honesty**
8. **NOT ENOUGH TIME** to prepare **CREDIBLE** estimates
  - Time often spent doing "what if" exercises, or splitting dollars into arbitrary buckets

**RAND Study – Reason for 74% of Cost Growth**

**"I reject a system that rewards failure and protects a person from its consequences"**  
- Barack Obama -

**Glenn Butts, NASA**  
**Mega Project Estimates- A history of denial (2010)**  
<http://www.build-project-management-competency.com/wp-content/uploads/2010/09/Glenn.Butts-Mega-Projects-Estimates.pdf>

**Joint Confidence Level Paradox- A history of Denial (2009)**  
<http://www.build-project-management-competency.com/wp-content/uploads/2009/12/NASA-Cost-Schedule-Report.pdf>

**Conclusions**

- ♦ **Most large projects**
  - **Projects everywhere suffer the same fate.**
    - Early estimates are optimistic – much more than commonly believed.
  - Any early estimate for a development project that fails to consider possibility of triple digit cost growth **is NOT being realistic.**
  - No other experience is more valuable than the experience of failure, it must be shared **honestly and completely.**
    - Coverups & revisionist history must be stopped in attempt to bury the truth
- ♦ **Two requirements to prevent cost overruns.**
  1. Create **BETTER** initial estimates by **real** estimators
    - Include all potential risks (internal and external)
      - ~ 50% of project cost growth due to external factors
    - Add probabilistic allowance for true unknowns
  2. Hold Project Managers accountable to original estimate
    - They will stop "spinning numbers" and will demand
      - Qualified estimators & credible numbers
      - Failure analysis to determine issues
- ♦ **Supporting research is covered in depth within the white paper**
  - **"Mega Project Estimates - A History of Denial."** Please read it!
  - Email for a copy Glenn.c.Butts@nasa.gov

**Specific Recommendations**

1. **In a Policy Statement:**
2. Specify that all risks be included in the JCL Assessment.
3. Mandate precise criteria upon which we are being asked to provide JCL assessments.
4. Require all estimates to be created by a bona fide estimating department with direct reporting to senior management.
5. Recognize that cost control is as important as the cost estimate. Require valid cost impacts of all changes to be estimated, and not submitted as "no cost" changes.
6. Require managers to identify and publicize all valid elements/components identified by qualified personnel even if those items are not admitted or disclaimed by the program.
7. Require cost estimates to be submitted in future year dollars reflecting historical long term escalation rates - never in base year dollars.
8. Require that the current development stage of the program be identified on the estimate.
9. Disenfranchise the risk reward system that provides strong incentives for underestimation. (Important details on this point are listed in the paper, "The Joint Confidence Level Paradox - A History of Denial.")
10. Remove the prevailing stigma that under-runs are unacceptable. Under runs are required to make portfolio effect work.
10. Begin to use the JCL-PC estimating equation introduced in this paper.

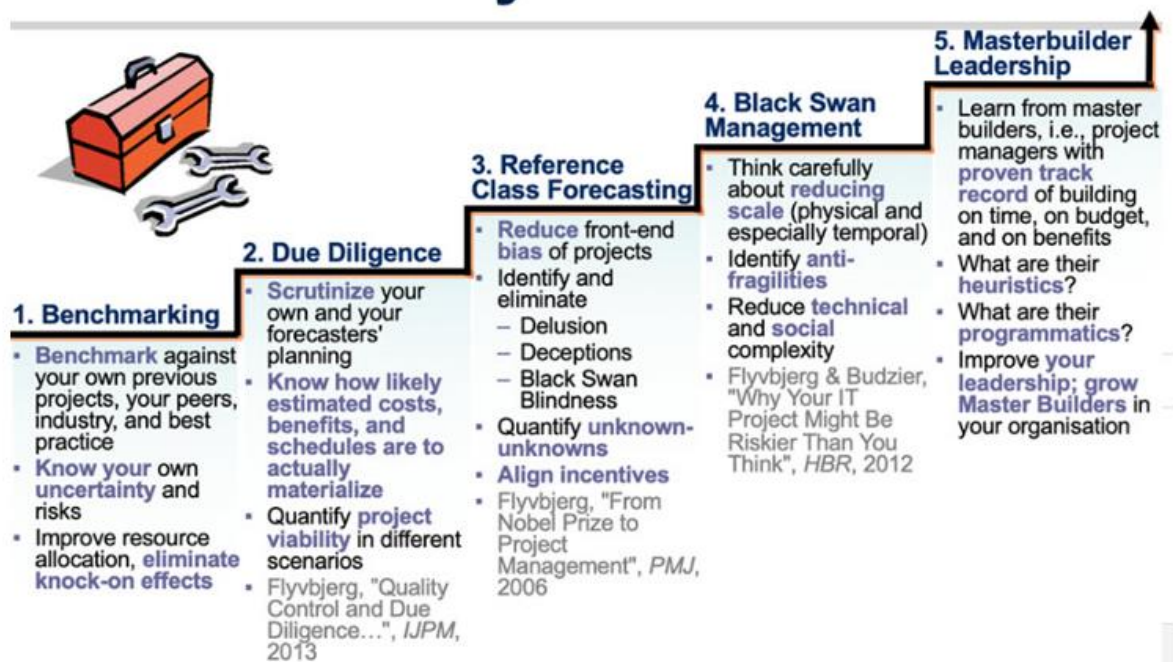
**Stop mandating processes and reports - start rewarding success and punishing failure. IMPROVEMENTS WILL OCCUR!**

Page 10

Butts, Glenn NASA 2009 and 2010

Another outspoken critique of project management as it is being taught, practiced, and certified today is Professor Bent Flyvbjerg, Oxford University. Bent Flyvbjerg is a Danish economic geographer. He is a Professor of Major Program “Management at Oxford University's Said Business School and the first Director of the University's BT Centre for Major Program Management. <https://www.linkedin.com/in/flyvbjerg/>”

# Stairway to Success



Flyvbjerg, Bent (2019) <https://arxiv.org/ftp/arxiv/papers/1409/1409.0003.pdf>

Flyvbjerg has created a very unique and REALISTIC "Capability Maturity Model" that reflects the findings of Butts and represents the views of this author as well. With PMI totally rewriting their PMBOK Guide 7<sup>th</sup> Edition, they would be not only REMISS but professionally NEGLIGENT not to include the work of both Flyvbjerg and Butts in their update. The same goes for IPMA, AACE, APMG, and other global organizations claiming to represent the practice of project managers. We simply cannot stand by and tolerate the malfeasance, misfeasance, and nonfeasance of those in our midst. Until or unless we start to see project SPONSORS, project MANAGERS, and project CONTROLS/PMO technical people in handcuffs doing the perp walk on the 17:00 CNN news and then being tried and convicted then sentenced to serious prison time, we are NEVER going to see any measurable improvement in project success rates. For more on this, reference Butt's 2010 presentation, Slides #31 and #32.

## About the Author



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**Dr. Paul D. Giammalvo**, CDT, CCE (#1240), MScPM, MRICS, is a Senior Technical Advisor (Project Management) to PT Mitratata Citragraha. (PTMC) Jakarta, Indonesia. [www.build-project-management-competency.com](http://www.build-project-management-competency.com). He is noted for the development and delivery of graduate level, blended learning curricula designed for the mid-career path, English as Second Language (ESL) professionals to develop competency in the local practitioner and build capacity for the local organizations. For 25+ years, he has been developing and delivering Project Management training and consulting throughout South and Eastern Asia Pacific, the Middle East, West Africa, and Europe.

He is also active in the Global Project Management Community, by playing a “thought leadership” role for the Association for the Advancement of Cost Engineering International, (AACEI) [http://www.aacei.org/since\\_1991](http://www.aacei.org/since_1991); He has also been active in two IPMA member organizations: The Green Project Management Association (GPM) <http://www.greenprojectmanagement.org/> where he served on the Certification Board of Directors for two years and the American Society for the Advancement of Project Management <http://www.asapm.org/> for which he served for four years 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](http://www.globalpmstandards.org), Sydney, Australia, and is active as a regional leader. Currently, he is a compensated consultant to the International Guild of Project Controls. <http://www.planningplanet.com/guild> as the primary author of their “Compendium and Reference” as well as the chief architect of their competency-based credentialing program. <http://www.planningplanet.com/guild/certification>

He has spent 35 of the last 50 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 and the Negev Airbase Constructors, Ovda, Israel and the Minas Oil Field in Rumbai, Sumatra. 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.

In addition to 45+ years of hands-on field experience, 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 Ph.D. in Project and Program Management through the Institute Supérieur De Gestion Industrielle (ISGI) and Ecole Supérieure De Commerce De Lille (ESC-Lille) under the supervision of Professor Christophe Bredillet. “Dr. PDG” can be contacted at [pauldgphd@gmail.com](mailto:pauldgphd@gmail.com).