

IMPROVING LEARNING EFFECTIVENESS

using the RAIT© Training and Coaching measurement and continuous improvement tool.

Introduction:

The Australian Institute of Management(AIM) in conjunction with the Measurement Institute of Neuropsychological Diagnostics(MIND)commenced a study(2008 to 2010) to

- 1: Evaluate the learning effectiveness of their public program offerings.
- 2: Identify and implement key identified issues for improvement
- 3: Evaluate the impact of an ongoing coaching program for facilitators

To facilitate this measurement the Rodski Assessment and Impact of Training(RAIT©) tool was used in all program assessments.

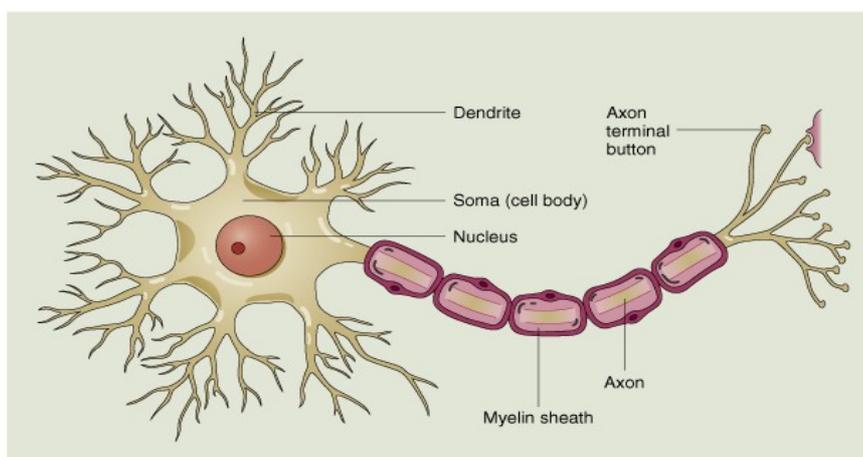
About the measurement tool(RAIT©):

The RAIT learning effectiveness measurement tool was developed by Dr Stan Rodski, neuroscientist and psychologist. The tool was developed over a period of 20 years during which brain neuroscience showed using fMRI technology that when humans are learning three critical incidents predominate its activation. These were

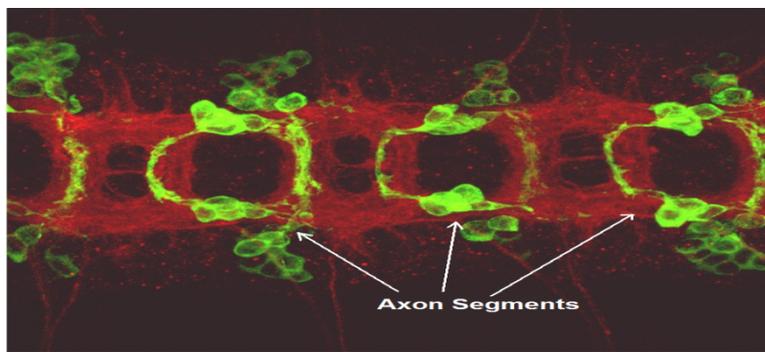
- 1:Environmental/Hygiene factors such as design, duration, content, seating , lighting etc.
- 2: Facilitator factors such as knowledge, skill, empathy etc and
- 3: The motivation of the learner.

The Neuroscience of the research:

The BRAIN is made up of literally millions and millions of cells called NEURONS.

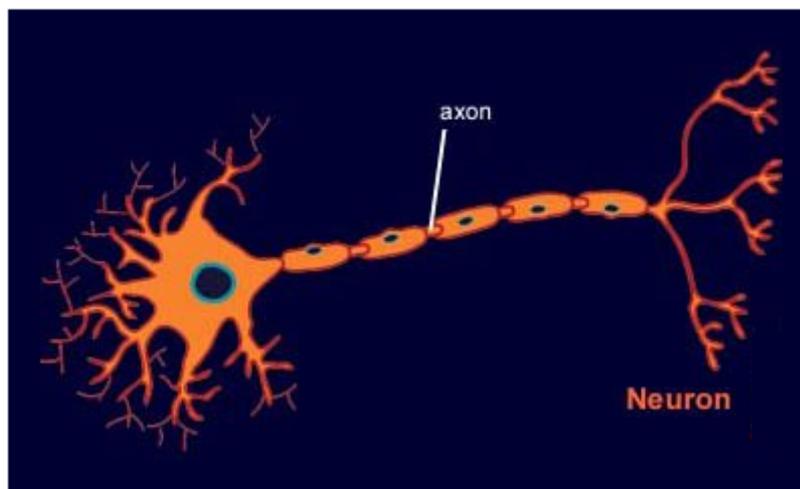


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These are the basic neurotransmitters within the brain, processing information and playing critical roles in memory and LEARNING.

When we think, recall, put things together and learn these dendrites contact each other through a connection called the AXON.



The AXON is a critical component for the memory and learning phases of our thinking (cognitive) processes.

Clusters of dendrites, connected by axons, form what we term memories and these activate or 'spark up' and retrieve information from these clusters.

With learning these clusters seek out connections which are MEANINGFUL to the task or need.

The AXONS play an important role here because the number of axon segments contained within the overall axon (looks like peas in a pod) is critical to determining the relationship between them. These segments represent the barriers or passage ways between dendrites and throughout the brain.

The axon segments carry the critical/important connections between the information carrying dendrites.

This is the basis of CRITICAL INCIDENTS LEARNING THEORY and the major construct underlying RAIT and the Learning Indexes(LI's) it produces.

To develop the RAIT tool around these identified critical incidents a meta analysis was conducted across training and learning research to identify those variables that might significantly contribute to the learning critical incidents found in the neuroscientific studies. From the meta-analysis 30 significant factors were identified and weighted using multi factorial statistical methodology. Of the 30 variables 20 related to facilitator driven factors and 10 to hygiene/environment factors.

Over the 3 year study period(2008 – 2010) all public programs conducted at AIM were measured using the RAIT tool and these 30 learning variables. In total 1180 programs involving over 15,000 participants and 76 facilitators were assessed.

Method:

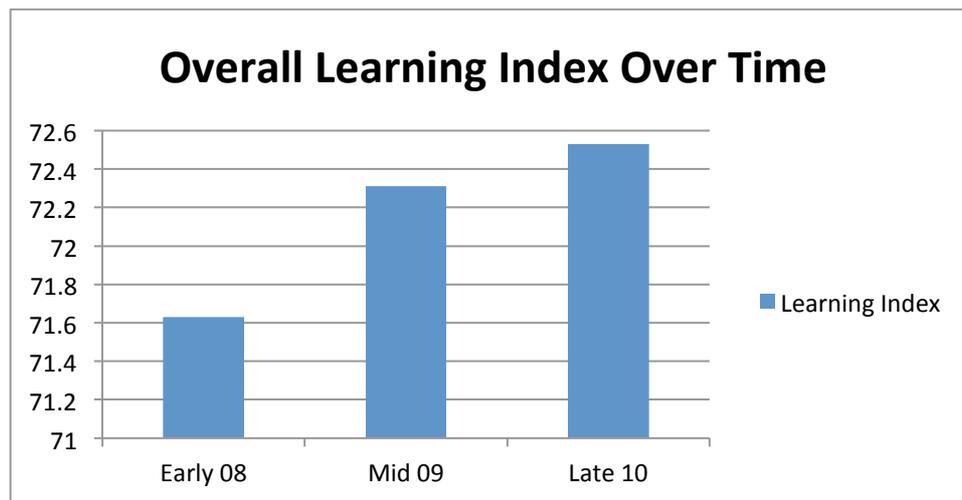
To ensure a total population measurement the RAIT tool was delivered in a paper based format delivered and completed by participants before and after each training program. This method ensured that nearly 100% of participants completed the forms for analysis.

Prior to commencement all facilitators attended information sessions about the study and the RAIT tool in particular. At this session the facilitators were provided a detailed explanation of reports and the detailed analysis which would allow them to identify areas for improvement. Results would be available soon after completion of the program and they were encouraged to implement changes where they could. Where design or environmental factors appeared these were referred to AIM management.

Facilitators were, at this time also offered the opportunity to participate in an ongoing coaching program with one to one, hour long coaching sessions to help identify and put into place improvement strategies and initiatives.

Results:

Over the 3 years of analysis 2008, mid 2009 and the end of 2010 it can be seen that AIM has improved learning effectiveness over time. These points were chosen as they represent the beginning, middle and end of the three year study periods. Overall, regardless of whether facilitators were in the continuous improvement coaching program, AIM has increased in both learning efficiency and learning effectiveness. This is reflected by the increase in the Learning Index measure shown in the graphs below.



In the base line studies of 2008 all thirty factors were identified for improvement. The Top 5 factors for improvement were:

Hygiene/environment

1. Time in program to practice learnings
2. Quality of training facilities
3. The ambience (overall feel) of the training room
4. Training format eg. 1 full day versus 2 half days, etc.
5. Pace of learning

Facilitator performance

1. Being encouraged to participate during the training
2. Trainer uses active listening/questioning and exploration
3. Trainer's knowledge of subject and materials
4. Trainer provides support during the program
5. Feeling involved during the program

By 2010 the number of factors that had improved was 20.

The top 5 performing factors in 2010 were

Hygiene Factors

1. Training format eg. 1 full day versus 2 half days, etc.
2. Quality of training facilities
3. Clarity of presentations, hand outs, all things read
4. Pace of learning
5. What I have learnt is transferable into my organisation

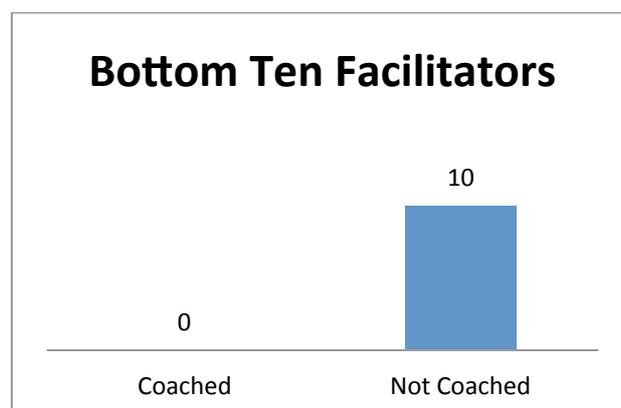
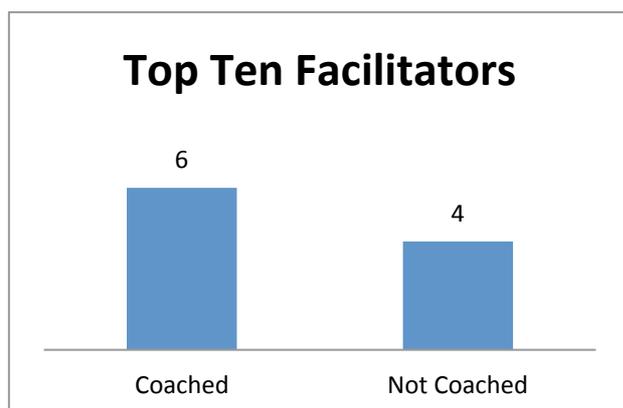
Facilitator Factors

1. Trainer provides support during the program
2. Trainer's knowledge of subject and materials
3. Trainer uses active listening/questioning and exploration
4. Being encouraged to participate during the training
5. Feeling involved during the program

With the one on one coaching provided over the 3 years a t-test was performed to investigate whether there was a significance difference for coached and not coached groups on the measure of learning effectiveness. A significant difference was found, $t = 3.23$, $p = 0.001$, equal variances not assumed. A significant mean difference for the coached and not coached groups on the measure of learning index was also found, $t = 3.45$, $p < 0.001$, equal variances assumed.

Analysis of AIM facilitators who participated in a coaching program and those that didn't revealed that there were no significant differences between the two groups prior to the commencement of the coaching program. This shows that the two groups could be considered similar thus allowing the effect of the coaching program to be analysed.

The top ten and bottom ten AIM facilitators were analysed and are illustrated in the graphs below.



The top ten facilitators were found in terms of effectiveness scores. Out of the top ten facilitators', 6 had participated in the continuous improvement program. Out of the bottom 10 facilitators none had participated in the continuous improvement program. This indicates that a coaching program not only improves performance of facilitators to be among the top in their organisation but also that the coaching prevents facilitators from being at the bottom of the organisation in terms of their effectiveness.

Prior to the study commencement there was one particular hygiene/environmental factor that was thought to significantly affect learning outcomes - the room in which the training took place. The study found this was in fact not the case and the room in which the training was held did not significantly affect learning effectiveness. A Pearson's correlation was performed and this was not

significant, $R = 0.007$, $p = 0.918$. This indicates a very weak correlation between room and effectiveness with the room accounting for just 0.7% of the variance in effectiveness scores.

Summary:

The study of AIM's public program learning effectiveness showed that the implementation of a measurement tool like RAIT had the effect of improving learning effectiveness through feedback and specifically was able to enhance learning outcomes achieved by those facilitators who underwent coaching to improve their learning outcomes for participants.

Further research into the learning outcomes of participants returning to the workplace will be the emphasis of future studies. The current use of RAIT in programs at AIM will continue to allow trainers/facilitators, designers and management to focus on improvement opportunities to ensure the ongoing return on investment expected by its clients.

Dr Stanley Rodski