16 Formal, Informal, and Incidental Learning

How Recreational-Diving Instructors Achieve Competency

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ABSTRACT

The scholarly, commercial, and anecdotal arguments around the tensions between formal and informal learning have produced perplexing per- perspectives on the validation of workplace competencies and qualifications. This chapter explores one site where these complexities produce various tales and notions of work readiness regarding instructors within the recreational-diving industry. The chapter begins with voices that extol the virtues of formal learning through curricula being pitted against those that highlight the inherent value of informal learning. It positions informal learning as the means to fill gaps in the diving curriculum. It promotes raising the diving industry's consciousness on using incidental learning experiences as important experiential activities that enable the production of all-around competent diving instructors.

Data gained from interviews and observational studies indicate that in this context, there is a presumption that informal and incidental learning processes work together more effectively to attain instructor competence as opposed to prior formal training. Although the informal processes are not entirely unpredictable, little recognition is given to their importance or that improved leadership can create greater opportunities for instructor development and organisational growth.

INTRODUCTION

The training of scuba divers moved rapidly from its early beginnings in the military to the civilian population. With a burgeoning demand for involvement in the sport, there was, and remains, a proportional demand for instructors to teach diving. Yet where the early divers gained much-varied experience before becoming instructors, today's generation becomes certified much faster and often with questionable experience levels. From this is an ever-present argument of which is better: learning from the school of hard knocks through varied and unregulated experiences or education in a formal framework of learning that focuses on what should be done, attempting to avoid mistakes often made by unregulated practice and within a more abbreviated time frame.

This chapter discusses the binary question of informal versus formal training and reflects on how recreational-diving instructors are presently trained and the experience levels necessary but arguably absent from that training. It looks in particular at the value of incidental learning within the entire learning process and how this contributes to the ultimate objective of instructor training: workplace competence and a recreational-diving instructor who is capable of doing their job effectively.

This chapter is therefore composed of the following sections:

- A brief history of recreational diver training
- Time for a change
- Workplace competence
- Formal versus informal learning
- Incidental learning

In other words, many subjects and skills taught in the earlier days of recreational diver training were derived from what was previously thought to be relevant but with little reflection on the altered contexts of demographics (civilian versus military) and technology (crude and makeshift equipment versus specifically designed equipment). Things had to change. With the increasing popularity of recreational diving, there was a proportional increase in the demand for training and the production of instructors to fulfil this need. In response to this increased need, greater thought was given to what skills and knowledge should be taught to both beginner divers and instructors alike.

TIME FOR A CHANGE

In the mid to late 1960s, organisations such as the Professional Association of Diving Instructors (PADI) and Scuba Schools International (SSI) became established and commenced using a systems-oriented approach to diver training where skill requirements are immediately relevant to the course being taught. This approach obligates the trained divers to dive within the limits and conditions they have been trained in. This change brought more efficiently achievable steps required to gain instructor status whilst still requiring formal attendance of classes for knowledge and skills development. This situation has become even more streamlined over the last decade, with less demand for classroom attendance by providing more opportunities for home study instead. Even so, little change has been made to either skill requirements or prerequisite dive experience levels for the respective courses leading up to and including instructor training. This creates situations where instructors are certified but may miss the experience and skills necessary for many diver-training situations. In turn, this leads to statements such as the following from recently trained instructors:

I think that there should be more of an [sic]; well, induction is probably the wrong word, but it is real-life experiences. I'm not sure what instructors go through now, but I know when I went through the instructor course [it] didn't prepare you at all for what was out there. (Geoff)

It's [IDC—Instructor Development Course] a very brief quick course for the responsibility you are ultimately given. I think also as far as go- ing from OW [open-water diver is the first certification step] to Instructor in one shot is silly. (Leila)

Well, I wouldn't think that that would be it. Some of the people who come out of the IDC and IE [instructor examination] are pretty raw, aren't they? They come into the industry, they've done their open water course with someone. They've maybe got a job on the boat as an intern and do their advanced, rescue, divemasters—okay that may have happened within five weeks or six weeks. So they say "oh now I'm a divemaster I'm going to be an instructor." So next month they're off to do their instructor course, they do their IDC, they do their IE, they get awarded an instructor ticket and then a week later on they're out on the boat and teaching people, maybe twice their age, how to dive, with little or no experience actually in the real world. (Jeremy)

This indicates the apparent gap between what should be learned before certification and what may eventually have to be further learned informally to ensure competence in performing the job for which certification has already been achieved. Certification, as it appears in this context, is certainly not a qualification. A certificate indicates that a person should be qualified to do something; but just how genuinely workplace competent are they?

WORKPLACE COMPETENCE

Boyatzis (1982) defines competence as "an underlying characteristic of a person, which results in effective and/or superior performance in a job" (p. 21). But there are many variations of this definition, some of which have been outlined by Hoffman (1999) reflecting on the work of Sternberg and Kolligian (1990), Burgoyne (1993) and Bowden and Masters (1993), who propose meanings that fall in line with their specialist activities of psychology, management theory, human resources, politics, and education, respectively. Although these definitions may have some bearing on the competence required of recreational-diving instructors, a more clearly defined description of the skill sets necessary for workplace competence in this context is desired. This subsection looks at how experience is gained and how prior and ongoing learning reflects on this experience in achieving workplace competence.

The recreational-diving industry is an important sector of the tourism industry in many tropical destinations such as Far North Queensland. With the existing systems of instructor training offering relatively easy access to involvement within the diving industry, there is an obvious financial advantage to be gained from having more instructors to train, and being as expeditious in that training as possible. On the other hand, there is the possible future disadvantage of producing instructors who are not yet workplace competent and who may be accidents waiting to happen.

Specific competency standards are listed in the relevant texts and guides the major diver-training agencies issued. One such diver-training agency (PADI) in Australia has been granted a Registered Training Organisation status, which enables the delivery of nationally recognised training. According to this organisation, "PADI programs are performance-based, not time-based" (PADI IDC Workbook, 2001, pp. 2–3).

Time, however, is when we gain experience, and according to Harris, Guthrie, Hobart, and Lundberg (1995), "competency and experience are inextricably linked" (p. 99). To

define competency, the Australian National Training Board (1992) maintained that these standards should relate to workplace practices, be expressed in outcomes, and be understood by trainers, supervisors, and prospective employers. The board also believed these standards should acknowledge workplace reform requirements and an industry's needs. These needs should include the ability to apply skills in varying situations, rather than just perform current tasks (Harris et al., 1995, p. 94). This means it is important not only that the training received gives the student a structured set of immediate objectives to achieve, but also that achievement of those objectives will enable performance under changing conditions. A good example is a diving instructor who can deal with students in a calm, clear, confined water area but should also be able to deal with those same students when the conditions are not so tranquil or clear. Current instructor-training programs discuss these changing situations but rarely allow experiencing them.

It is this type of situation, as described above, that prompted Garrick (1998) to comment: "The pre-defined nature of competencies can remove elements of professional judgment" (p. 157). Workplace competence is thus a result of learning processes that involve conformity to a set of predefined standards applied in a working environment. Yet the environment often changes and exposure to these variables, with time and experience, will enable good judgment and yield positive outcomes. About the above example, this would indicate knowledge of industry standards limiting maximum student numbers to have in the water at any one time given ideal conditions, but the experience would be the factor defining what this number should be reduced to in this specific situation. It appears that the only available formula for improving this ability is through practical involvement with the communities of practice located in the immediate workplace where more informal learning occurs.

FORMAL VERSUS INFORMAL LEARNING

It is an emerging realisation that informal learning has more validity in the workplace than the quantum of information learned in less contextualised settings (Boud, 2005; Cross, 2007; Garrick, 1998; Hager & Halliday, 2009; Marsick & Watkins, 2001; Rowden, 2007; Senge, 1993). Cross's (2007) comment that "Workers learn more in the coffee room than the classroom" (p. 235) is particularly telling, and the value in this may well be reflected by dive instructors' daily reflections when informally discussing their problems on-site during breaks in the day.

If informal learning is then seen to be of such significance to the development of appropriate training in the workplace environment, it requires more research to answer the question of how the training of recreational-diving instructors could, or should, be modified to enable workplace competence.

Much of the formal training in the IDC process is objective oriented with more or less standard responses required to set questions and skill demands. These conform well to the present-day competency-based training design. However, criticism of formal competency-based training is provided by Cooper (1992), who observes that "in the assessment process no question could be asked of a participant for which the answer was not

provided in the modules; and that no materials were presented as problems to be engaged with, or situations to be investigated" (p. 20). This agrees with Bone, Harris and Simons's (2000) findings indicating that trainer competency standards do not match the actions involved in formal training.

Present diving instructor development processes are composed of a set of short-term learning activities grouped to teach the trainee instructor how to teach in the classroom, swimming pool, and open-water environments. This is followed by a cluster of knowledge-development sessions explaining the standards, procedures of conduct, and marketing of various programs available for the instructor trainee to teach. After a two-day summative assessment phase, the successful trainee instructor is deemed capable of entering the workforce as a productive unit. There is little reference to any development-mental learning such as reflective activity (Schön, 1983) to "bridge the gap between academic theory and professional practice by integrating the two into a cycle of learning" (Johnston, 1995, p. 76). The gap between traditional schooling and professional practice requires consideration of complex problems and new professional images to deal with them (Schön, 1983).

As well as technical competencies such as diving-skill performance, other attributes ascribed to competent trainers are well-developed human interaction skills such as those of questioning, listening, and providing considered feedback. Florian, a recently certified instructor, gives a typically echoed comment of the formal training he did for his instructor's course:

There was no training in terms of dealing with people. That's 90% of the job—the ability of being nice, friendly and offering some kind of service. I keep going back to that one because for me, it's the main thing. (Florian)

The theory supporting the value of human interaction skills and feedback goes back a long way (Boyatzis, 1982; DeVito 1993; Lewin, 1951) and may suggest at least one area of the present curriculum that requires greater scrutiny. Lave and Wenger (1991) maintain that human interaction skills are an important part of the development phase of technical competencies.

They consider that apprentices learn much from their peers, noting the effectiveness of the circulation of information. This suggests that engaging in practice (rather than being its object) may be a condition for the effectiveness of learners.

This consideration is supported by Cross (2007), who writes that there is another factor at work that makes learning informally often more memorable than formal education methods. He believes that repetition spread over intervals is more likely to be retained in long-term memory than repetition taking place within a relatively shorter time frame. In other words, regular and constant exposure to certain methods and practices is better than reading and memorising detail about a process and perhaps considering it only once or twice. In the former instance, the learning can become an embedded capability learned through practice; in the latter, it is less likely to be embedded. Furthermore, this may breed the belief that sufficient learning has taken place because a subject has been

examined once; therefore, it does not need revisiting until it may be needed. This could be very dangerous if the learner who had a brief and cursory practice at lifesaving techniques in the classroom or in confined water were called on to attempt resuscitation in a real-life situation. Less dramatically, and with absent leadership, learning from peers with equally poor interpersonal communication skills could produce negative outcomes such as customers rejecting opportunities to participate in an introductory dive or failing to return.

Informal learning within the workplace in the company of communities of practitioners is thus asserted to be of greater importance to job performance than formal training in classroom settings. This is a likely reflection of how recreational dive-instructor training occurs in practice. However, this does not entirely negate the value of formal learning processes. The question remains now as to the boundaries of the formal and informal learning processes in this context and whether these can be modified to enable and maximise more effective and efficient workplace competency.

Whilst informal learning thus far has been discussed in contrast to formal, structured programs of instruction, it is becoming identified as separate also from nonformal learning, defined by Smith & Clayton (2009) as "not intentionally accessed by the learner, and thus is neither structured nor institutionalised" (p. 6). This description reflects the many definitions given to *incidental learning*, which, although interconnected, is not necessarily the same as informal learning (Rowden, 2007).

INCIDENTAL LEARNING

Incidental learning is defined variously as "a by-product of some other activity, such as task accomplishment, interpersonal interaction" (Marsick and Watkins, 1990, p. 121); "a spontaneous action or transaction, the intention of which is task accomplishment, but which serendipitously increases particular knowledge, skills, or understanding" (Ross-Gordon & Dowling, 1995, p. 315); "unintentional or unplanned learning that results from other activities" (Kerka, 2000, p. 1); and occurring as "an unintended by-product of some activity such as trial-and-error experimentation or interpersonal interaction" (Rowden, 2007, p. 7).

From these four particular definitions, it would be fair to say that incidental learning is a spontaneous, unplanned by-product of another activity. This is opposed to formally planned processes. Whichever view is taken, this form of learning is not planned; it just happens. Due to its spontaneous nature, it defies the idea of control and subordination to deliberate generation and subsequent rules and guidelines.

However, in preparation for such learning being realised, Lankard (1996) states, "Awareness of opportunities and the value of such learning may be brought to the learners' attention by emphasising the outcomes they might anticipate through incidental learning" (p. 2). Mealman (1993) indicates that these opportunities can include increased competence, increased self-knowledge, value for lifelong learning, improved life skills, and development of self-confidence. These opportunities are certainly of great value to an individual but may also be of similar benefit to an organisation, community, or industry.

From a recent interview with Stewart, reflecting on why he is so successful with introductory diving:

My thing on the boat is I'm really fussy about masks. I hate it if a diver has a foggy mask, even slightly foggy, or if the mask doesn't fit properly if it's too tight or loose because I found that that was the main reason that people would spit [out] their regulator . . . and I just put two and two together. (Stewart)

Stewart realised that if he was more deliberative about ensuring a properly fitting mask, as opposed to a mask that was barely adequate, he virtually eliminated the problem of introductory divers becoming overstressed by water leakage and blurred vision and, as a result of this, rushing to the surface and ending what could have become a great experience.

An early example from this writer's experience of the significance of incidental learning in the recreational-diving industry was a by-product of reflecting on what was inspirational and what was not. After only a short period of using the traditional method of diver training during the latter part of 1979, concern was given to two issues: why student diver trainees were cancelling courses and what excited others enough to continue. On reflection, both were tied together. In the first instance, students were being put off by the then relatively difficult prerequisite exercises of swimming and snorkelling before they were allowed to use a self-contained underwater breathing apparatus (SCUBA). In the second instance, for those who fulfilled those prerequisites, nothing provided greater excitement than actually breathing underwater. This provoked a change in marketing and training. Free introductory courses (two hours in duration) were offered as an enticement to try diving, and when potential customers signed on to the courses, the first element of training in the course was breathing on SCUBA, changing places with the more rigorous activities traditionally required. This quadrupled the annual number of student divers trained within the first year. It is important to note that this writer does not claim credit for this innovation. Even though ignorant of other actors, from subsequent research, this realisation was occurring worldwide at that time.

Today, this introductory course is a stand-alone program that enjoys a significant part of what the recreational-diving industry offers by way of diving experiences. The unpublished "2008 Diver Certification Statistics for QLD" as produced by one major diver-training agency (J. Hutchinson, personal communication, September 10, 2009) indicates that this form of diving experience represents 78% of all registered diving experiences resulting in some form of certification.

In the incidental learning example detailed above, the solution to that problem now reflects a significant proportion of present-day diving activities. Further, as can be seen in the data collected in this study, the enjoyment that the customer can experience is reflected in the continuing pleasure and breadth of human interaction skills developed by instructors in providing this particular training. This regular and varied interaction with customers begins also to define the value of social capital brought to, and often developed

in, the workplace situation by both the instructor and the company to which he or she belongs. But that is another story altogether!

CONCLUSION

Recreational diving is, with little doubt, a very stimulating sport and reflects a significant sector of the potential income, in particular in areas such as the far north of Queensland. With this comes a demand for competent instruction to ensure the safety of those visitors wishing to experience diving at the Great Barrier Reef. It is hoped that these visitors will give both a positive testimonial to that experience and add to the recreational-diving industry's future potential growth by continuing their diver training and/or becoming return customers. It is thus how recreational-diving instructors learn to become workplace competent in producing this type of positive response that is brought into question. The formal processes of training are arguably inadequate and require complementing by further informal learning processes. Much data suggest that this binary situation of both formal and informal learning processes is out of balance and must be modified to ensure improved instructor training through more negotiation and involvement with all stakeholders and, in particular, the communities of practice presently found in the workplace.

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