

# **Teaching the Theory and Practice of Captive Wild Animal Husbandry: A Coalescence of Pedagogical Approaches**

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## **Abstract**

Unitec New Zealand has, over an 8 year period, developed, redeveloped and delivered a programme committed to providing an education not only for those wishing to embark on a career journey as a zoo-keeping professional but also as continuing education for those that have been working within the industry for some time. The program has proven to be a success in terms of industry acceptance, student satisfaction and the practicalities of delivery. The key to this success has, in the main, centred on a well structured, integrated work experience practicum taught by and within zoo facilities, that also affords the work experience provider with 'home-taught' workers for the period of study. This paper reviews some of the issues encountered and overcome in designing and delivering a vocational qualification to a naive industry, and highlights some teaching/learning approaches that are utilized in a distance delivery program. As such, the paper will ask the most important questions that were posed along the way, and present the decisions that were made at the program's inception and during its delivery in answer to those questions.

## **Background**

The art of zoo keeping is the combination and integration of hands-on experience, practical and lateral thinking, anecdotal evidence and instinct. The science of zoo keeping is the utilisation of findings and conclusions of rigorous and informed investigation integrated with logical, fact driven processing. In the modern zoo, the zoo keeping professional must be capable of assimilating all of these traits to provide the best for their charges, the facility, the visiting public, and more broadly, the species, society and the local and global environment. And all within an industry in which there are no practical absolutes, the variables are numerous, the scientific record is sparse, and even ethics and philosophies are by no means standardised across institutions.

Despite the recent media popularity of the inner workings of zoos and similar establishments, and the associated focus on those working closest with their charges, the zookeeper position has commanded only a modest (at best) professional standing since the inception of such a recognized role nearly four millennia ago. Indeed, although one can now read at some length about how such issues as zoo design, philosophies on animal use, zoo *raison d'être*, and principle characters have shaped zoo development (e.g., Baratay & Hardouin-Fugier, 2002; Cherfas 1984; Croke 1997; Hancocks, 2001; Livingstone, 2000; Mullan & Marvin, 1999; Tudge 1992), there is little in the historical record, ancient and modern, that provides testimony and tribute to those entrusted with the care of captive wild animals. More recently, aristocrats, politicians, scientists, naturalists, media personalities and zoo owners/directors have been well documented as having contributed to forging a more acceptable relationship between humanity and the natural world. Notwithstanding such endeavours, the lot of the hands-on zookeeper has been a low key one and, as such, has commanded little investigation into career qualifications, pathways, progression and standardization.

In New Zealand, an apparent lack of consistency in regard to knowledge base, skill competency and responsibility within the zoo keeping profession was recognized. Such variation may have dramatic effects on animal husbandry minimum standards /best practice, success with respect to zoo aims and objectives, wider ranging conservation efforts and, ultimately, society's acceptance of the zoo industry. With this in mind, Auckland Zoo and Unitec New Zealand (a tertiary education provider) collaborated and prepared to develop a national standard entry level qualification that could,

in the first instance, be used to set a standard for those already working in the New Zealand zoo industry, but more immediately within Auckland Zoo itself.

### **What Needs To Go In the Curriculum and Who Decides?**

Part of knowing what should be in a vocational qualification is knowing precisely what the industry needs in terms of academic level, depth and range of knowledge, and expected skill levels. In this case, a number of facts highlight the difficulties with such a decision.

Firstly, and possibly most importantly, there is no globally accepted definition of what a zoo keeper actually is. This is in part due to and complicated by the following secondary considerations:

- There are almost 10,000 animal species in zoos worldwide that are recorded regularly on international databases (International Species Information System website, retrieved 2005)
- Zoo formats (e.g. open range park, safari type, city zoo, specialist animal group, aquarium, sanctuary, reserve) vary, with an equal number of variations of zoo environments (geographical location) and ideologies (culture)
- There are a huge range of resource capabilities within the zoo facility community
- As a result of the above, there is an extensive assortment of facility aims/objectives
- No hard and fast husbandry rules exist, thus providing for very wide, grey demarcation lines for minimum standards and best practice
- Relatively few historical facts have been recorded pertaining to the profession of zoo keeping. Knowing where one has come from is essential to knowing where one needs to go
- The nature of the industry inevitably creates a complex spectrum of ethical beliefs and philosophies, and
- This is a rapidly changing world.

In addition, reconciling the requirements of the industry with the qualification's structure, processes and resources is often an arduous task since it is rare to find zoo professionals with intimate knowledge of academic inner workings. Equally, few academics with relevant backgrounds in qualification development would have a profound knowledge of ground level zoo keeping. However, this program's development was established using an industry leader from Auckland Zoo with relevant experience of academia abroad, and two academics with extensive industry experience at a hands-on level.

It was thus decided that the entry level zoo keeper in New Zealand requires four main areas of proficiency: Understanding the underlying theory, application of the theory to practice, working within an appropriate ethical framework and developing on-going transferable skills. It is not the remit of this paper to relate qualification content in any detail; however, understanding what is required of a profession clearly correlates to not only the specific content, but also the precise nature of its delivery. It was realized at an early stage that integrated within the learning experience must be a vehicle by which teaching, practice and assessment on the practical skills of zoo keeping can take place. Thus, a large component of work experience, 320 hours, was formally incorporated into a one year part-time qualification. As the program progressed and developed, this work experience became credit bearing within two courses of the program, and therefore, the work experience became structured and defined.

### **How Can the Program be Delivered to a Wider Audience?**

The expectation was that eventually, this qualification would be used to: a) up-skill currently employed zoo keepers across the country, and b) be an entry level qualification for those wishing to gain employment within the zoo industry. However, given the facts that Auckland Zoo could only provide a small number of work experience placements initially and that the other New Zealand zoos

were distributed across the length and breadth of the country, a distance delivery format was the only option if this was going to be successful at creating a standard.

To provide for this, certain mechanisms had to be in place:

- A system for delivering a large quantity of underlying theory
- An ability to teach more complex conceptual information
- An environment and system that allows for 'real' student based learning and assessment and yet is logistically viable
- A forum for open discussion and co-operative learning
- A provision for tutorials if required
- A method of providing practice and assessing practical components, and
- A scheme by which students could acquire their 320 hours work experience

These are all achieved using an array of teaching/assessment tools.

#### Block Courses

All students attend three compulsory three-day block courses which are spread strategically throughout the year. Each block course is repeated in Auckland and Wellington, and students decide which of the two delivery sites suits them best. Apart from a small number of specialist topics taught by local vets and vet nurses, the same tutors deliver lectures and provide assessments at both sites to ensure consistency. Block courses consist of lectures, formative and summative assessments, discussion and debate, group work, on-site practical teaching and any tutorials that are required.

#### Online Web Based Learning

This provides a facility to deliver further materials as new information becomes available; can be used as a forum for longer duration debate via discussion boards; develops communication skills; provides easy contact between tutors and students, and between students; and provides the students with the illusion of being part of a class – something bigger.

#### Printed Material

Although soon to be replaced by interactive DVD, the present mode of delivering large quantities of information is via printed material. These are presented as course specific manuals within color coded files. The manuals are formatted for easy reading but also provide questions which require further research, provoke the student to further thought or discussion, and challenge the students to test their own knowledge and understanding of the material.

#### Directed Assignments and Assessments

The nature of the distance delivery means that direct contact time with students by tutors is small in comparison to in-situ delivered programs. However, this is compensated for by using well designed assignments. These require students to learn essential transferable skills in order to access the information required, and then show an appropriate level of understanding or evaluation in the presentation of the answers. Other modes of assessment used are exams (minimally), projects, practical assessment, peer assessment, on-going work-based assessment using log books, and summative on-site oral and practical assessments. Such a diversity of assessments ensures that an appropriate range of skills are tested during the program.

### On-site Structured Work Experience

This proved to be the most difficult area of development and created a raft of challenges in its own right. As such, the questions have been individually posed below. Regardless of the initial problems in set-up, the work experience becomes both the defining forum for integrating all that has been learnt (that is, a place for students to see the ‘what’, ‘how’ and ‘why’ actually working in real time and space), and also a spring board for further research and interest.

#### **In Light of the Above, How Can Such a Wide and Variable Topic be Taught Successfully?**

It was clear that teaching students everything there is to know about all captive animal species whilst providing for all zoo types, environments and logistical capabilities across a complex array of ethical and philosophical contexts, within a fast changing world, was not an option. To this end, a different view was taken (figure 1). In essence and put rather simplistically: Provide the students with all the underlying information, general principles, basic skills and fixed factual data. Next, instill a culture within the student and the industry to allow the student to evaluate and question what is taught. The zoos then provide a platform for the student to observe or carry out the applications within the everyday workings of a respectable zoo. Finally, the students are empowered to make decisions about how to achieve best practice utilizing all they have learnt within the parameters of the facility at hand. This final strategy also proves directly useful to the zoos providing the work experience since they may be working with outdated techniques, information or principles.

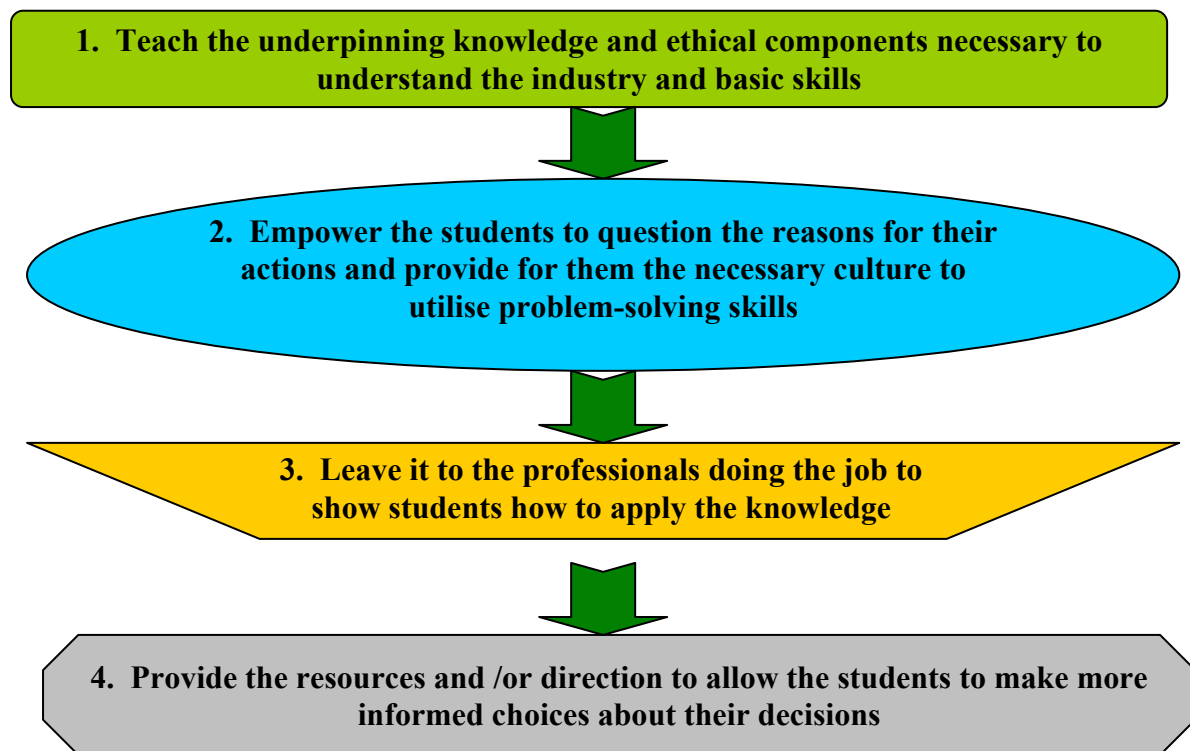


FIGURE 1  
Teaching and learning scheme

### **How is Consistency and Standard Measured across a Number of Facilities?**

This was a question asked by both the academic community and prospective students. In the first place, only facilities with a work ethic and acceptable standards of welfare are allowed to deliver the on-site work experience required of this program. This standard is assessed by independent individuals working or having worked within facilities that have internationally recognized standards. This process will become far more rigorous and defensible once the regionally driven zoo accreditation scheme comes into force. Second, most students are taught by a number of zoo professionals during their study year and not by one dedicated tutor. It has been shown that any inconsistencies in teaching standards are more or less negated by the number of different on-site tutors. Third Unitec program tutors and coordinators constantly review feedback from students and, in turn, provide feedback to the work experience facilities. This often has the effect of correcting problems almost immediately. Indeed, some of the zoos have created their own feedback systems in order to better cater for the students. Lastly; all summative on-site assessments are carried out by a senior member of the zoo staff at the facility of work experience in association with one of the Unitec assessors. Standardization of assessment can thus be assured across facilities since only two Unitec assessors are involved in testing all students across all facilities.

### **Isn't This Going to Cost Time and Money with Little Return for the Zoos?**

The very large work experience component of this program ensures that students become a very useful, energetic, motivated working asset to their facilities. In addition, because the work experience is credit bearing, the facilities are paid an hourly fee for each student that is on the program (predetermined and capped to the requirements of the course). However, these are only the direct advantages; the captive wild animal industry as a whole also benefits from this scheme. These are outlined below.

### **What are the Benefits of Using Industry to Deliver Such a Large Component of the Qualification?**

Feedback evaluations and monitoring processes have been integral to this program from its inception and have provided information detailing the benefits and costs to all stakeholders. It is clear that despite some issues common to academia regardless of program, industry and delivery mode, the most pertinent benefits commonly quoted are as follows:

- The program provides a reservoir of suitably experienced and qualified prospective employees
- Most zoos know the candidates for their jobs. Indeed, most students and facilities view the work experience as a 320 hour on-site interview for possible future employment
- The programme is seen by students as particularly relevant to their career goals
- The association between Unitec and the zoos provides a springboard for further relationships between facilities e.g. research, sponsorship, professional development
- Given the large work experience component, students are well aware of what the job entails and thus their own suitability to the industry
- Experience within the industry itself provides for the osmotic learning of many transferable life skills
- There is, by association, promotion of tertiary education to other workers within the industry that do not possess qualifications
- The partnerships with the zoo facilities create a large public relations base for the tertiary institution, and
- ALL parties benefit; a **WIN WIN WIN** scenario.

## Conclusions

Despite the difficulties there is now a transparent, industry specific approach to qualifications in the captive wild animal field. This has, in effect, created a standard nationwide - skills and knowledge are quantifiable against a benchmark of competence and as such, employers may expect a certain level of skill and understanding from their qualified employees. It is clear that the industry itself will, to a certain extent, have direct input into the on-going development of the qualification. Reviews inherently involve the facilities from which students gain their experience and where levels of competence are set.

Students are taught to be flexible, critical and analytical in their work, thus preventing the stagnation of philosophies, techniques and knowledge base, and so allowing the students to be responsive to the needs of the industry. Indeed this is what the industry asks of its employees now; the qualification draws attention to this specific industry's requirements and promotes the recipients as highly proficient, well educated professionals possessing a vast array of transferable life skills, capable of integrating with, supporting, contributing to and propelling the captive wild animal industry forward. Not semi-skilled labourers but highly skilled zoo keeping professionals.

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