Approaches to veterinary education – tracking versus a final year broad clinical experience. Part two: instilled values

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Summary
This is the second of two papers that the authors have written on this subject, and together they describe the results of the first major study of the outcomes of the two general approaches to the clinical training of veterinary students. One approach provides students with a broad experience with multiple species and the other provides them with an in-depth experience with just the species that they intend to work with in practice upon graduation (the latter is termed 'tracking', i.e. students follow a course of study along a particular specialised 'track'). This study obtained extensive feedback from the graduates of two schools, each of which was representative of one of the two approaches to clinical education. A total of 1,714 students took part in a survey in which they were asked to provide information about their career paths, their professional satisfaction, and their assessment of their training, especially in comparative veterinary medicine. They were also asked to say whether or not they would have preferred a different kind of training and who they would be most likely to hire as an associate: a tracking graduate or one who had received a broad-based education. The studies show that the several concerns that have been verbalised about tracking appear to be invalid. Upon graduation more than 90% of veterinary practitioners practice in quite a narrow area of veterinary medicine. We must, therefore, consider what benefits are gained from providing the typical very general preclinical education and offering students clinical training in animals with which they do not intend to practice upon graduation.

Keywords
Career-based veterinary education – Omni-competence – Tracking.

Introduction
There are two general approaches to clinical training in schools of veterinary medicine. The classic approach, which has been in existence for decades, has been to provide all students in training for the Doctor of Veterinary Medicine (DVM) degree, or equivalent, with a broad clinical experience involving multiple species, sometimes known as the 'omni-competent' approach. Alternatively, in a system of clinical training that has been termed 'tracking', i.e. students follow a course of study along a specialised 'track', students concentrate in at least their final year on just the species that they intend to work with in practice upon graduation. There has been much vigorous debate about the benefits and deficits of these two approaches, albeit without any substantiating data. Such discussions have also influenced both accreditation standards for veterinary schools and the credentialing processes for their graduates (1, 2, 3, 7, 8), yet again without a base of validated information. It is interesting to note that the first veterinary schools in the modern era only concentrated on a single species, the horse (5).

To better appreciate the possible benefits and deficits of these two approaches to veterinary education a study was undertaken seeking the input of students who graduated between 1988 and 2003 from the College of Veterinary Medicine of the Ohio State University (Ohio State), and the School of Veterinary Medicine at the University of...
California, Davis (UC Davis). These two schools are good representatives of the two approaches to clinical veterinary education. For decades the fourth year clinical programme at Ohio has given students clinical experience of working with multiple species, including dogs, cats, horses, and a variety of food animals. In contrast, UC Davis had a tracking curriculum in place prior to 1988 (4). In the Davis programme students concentrate their final year curriculum on just the species that they intend to work with in practice upon graduation. Some of this concentration also occurs in years two and three of the DVM programme. In this article, the first of a pair of papers that they have written on this subject (6), the authors have reported on the career path of students from the two schools. The article examines the relationship between the major species with which students worked in their final year clinical programme in veterinary school, the species with which they worked in their first position upon graduation, and the species to which their clinical activities in their current position are now directed. The authors also reported on the reasons that graduates provided for changing career paths or for remaining in practice with the same species, and, if they changed, how they accomplished the change (6). One of the salient findings of these studies was that the number of graduates that make major career changes is quite modest, and this raises the question of whether it is necessary for students to have clinical experience of multiple species. Many career changes occur that are a simple transition, for example, from a practice involving predominantly dogs and cats to one with an increasing number of exotics, or from a practice devoted to large animals, especially equine and bovine, to a practice that concentrates on just one of these species.

Several questions have been posed about the aptitude and attitudes of graduates who have been influenced by having a species-directed clinical experience and those who have been influenced by a more general clinical experience. Are there differences in the values that are instilled by these two types of DVM training? This paper reports on a variety of comparisons between the attitudes and values of graduates from the College of Veterinary Medicine at Ohio State and those from the School of Veterinary Medicine at UC Davis.

Methods

The previous paper (6) describes in detail the survey that was undertaken with the graduates from the two schools, the very favourable return rates from that survey (>40% [1,714 completed surveys]), and the approaches to data analysis. The data presented in this current manuscript was obtained from a further set of questions that were posed within the same survey. Statistical analysis was undertaken using either chi-squared or Wilcoxon-Mann-Whitney analyses, as appropriate. For many of the questions the respondents were asked to respond by making a mark within a circle on a line between two extremes on a 19-point scale. The specific graphic used to obtain the respondent’s evaluation is illustrated in Figure 1. Because of the considerable asymmetry of the responses obtained to these questions one mode of summation has been the reporting of the median value.

Fig. 1
The 19-point assessment scale
For several survey questions the respondents were asked to rank a given statement by marking the circle on the scale of 1 to 19 from ‘Not important’ to ‘Extremely important’, or ‘Strongly disagree’ to ‘Strongly agree’, or ‘Definitely not’ to ‘Definitely’ as indicated for the various individual questions.

Data analysis

The study had a large sample size and for many analyses opinions were sought on a 19-point scale (Figs 2-6). The combination of these two factors can result in the detection of differences that are statistically significant yet representative of only a small change. Thus, a quoted p value of <0.001, while indicating that there is a statistically significant difference, does not necessarily mean that the difference represents a major divergence of opinion.

Results

Professional satisfaction

Ohio State and UC Davis are both, in the opinion of their graduates, very successfully fulfilling their mission to train veterinarians, each school performing very comparably. This is well evidenced by the graduates’ responses when asked to indicate the degree to which they agreed with the following statements:

- ‘My veterinary education prepared me for my career path’ (Fig. 2a)
- ‘I am a professionally successful person’ (Fig. 2b)
- ‘I consider myself a financially successful person’ (Fig. 2c)
- ‘I am happy I chose veterinary medicine as my career’ (Fig. 2d).
Graduates were asked to rate their level of agreement on a 19-point scale from ‘Strongly disagree’ to ‘Strongly agree’. The median scores are recorded in Table I.

Based upon the graduates’ responses it is clear that an extremely high number of the graduates from both schools were happy they chose veterinary medicine as their career. It is also clear that they considered that their education prepared them well for this career, and that they were both professionally and financially successful. This satisfaction with their education puts into perspective their opinions on the nature of veterinary education that is important for success; these opinions are reported in the remainder of this paper.

**Expected attributes**

Key to the outcome of any veterinary curriculum is the attainment of key attributes. To explore the potential differences in the outcomes of the two curricula that the Ohio and Davis graduates had experienced, they were

![Graphs showing assessment of professional success](image)

**Fig. 2**

Assessment of professional success

- ▲ Graduates of the University of California, Davis
- ◇ Graduates of the Ohio State University
- ■ Combined
asked to define how important several key competencies were to them, and to their practice of veterinary medicine. Their assessment of the significance of these competencies was based upon the 19-point scale from ‘Not important’ to ‘Extremely important’, or from ‘Strongly disagree’ to ‘Strongly agree’. The results presented in Figures 3, 4 and 5 are shown for the total cohort of Ohio and Davis graduates, and for each separately. The data provide some notable messages.

It is no surprise that of the set of attributes scrutinised clinical reasoning skills ranked at the height of extremely important (Fig. 3a), with no difference between the Ohio and Davis graduates, and with the median score for each equal to the maximum score possible (Fig. 3a). It is reassuring that client communication skills ranked equally highly (Fig. 3b), again with the median score equal to the maximum score possible. It is interesting to note that the training of most respondents was not in an era when teaching communication was a major priority in veterinary schools or when formal training in communication skills existed. An understanding of veterinary business also ranked highly with both sets of graduates, albeit with a somewhat lower median score and more divergence of opinion among the graduates (Fig. 3c). Additional analysis (data not shown) showed no significant divergence between recent graduates and those that had graduated several years ago, suggesting that the spread of responses was not related to whether or not the business side of veterinary practice had become a key component of their activities. It is clear that the younger generation of veterinarians appreciate the need for business acumen as a part of their success. Like communication skills, veterinary business skills have only recently been recognised as an important education priority.

There is a perceived consensus that an appreciation of comparative medicine is central to the practice of veterinary medicine. One concern voiced with some frequency is that students who follow tracking curricula do not develop this appreciation to the same degree as students following omni-competent curricula. To ascertain whether this might be true, graduates were asked to rate the importance of the following:

- physical examination skills across species (Figs 4a and 4b)
- an understanding of disease processes across species (Figs 4c and 4d)
- an understanding of comparative medicine across species (Figs 4e and 4f).

The respondents were asked to address the importance of these attributes for a new graduate (Figs 4a, 4c and 4e) and for a veterinarian 10 years after graduation (Figs 4b, 4d and 4f).

Both for new graduates (Figs 4a, 4c and 4e) and for veterinarians 10 years post graduation (Figs 4b, 4d and 4f), these three characteristics of comparative medicine expertise were highly rated, with a median score of 11 or higher, by both Davis and Ohio graduates. For all three areas of comparative medicine knowledge, the Ohio graduates ranked the importance of these attributes slightly higher than Davis graduates (p<0.001 for all six comparisons), but only by one or two points out of the total 19-point range. As discussed under ‘Methods’, obtaining such a level of significant difference was clearly a characteristic of having an extremely large sample size, since the median differences between the two groups was only one point (Figs 4b, 4c, 4e and 4f) or two points (Figs 4a and 4d). In each area the profile of scores was complex, but for each question the scores of the Davis and Ohio graduates were quite similar for each attribute examined. While some differences were observed between the Davis and Ohio graduates in their assessment of the role of comparative medicine in their clinical training, the minor differences observed were by no means sufficient to conclude that tracking-based education does not foster an appreciation for comparative medicine, as has from time to time been claimed, often with some vigour. Further examination of whether the differences observed were indeed reflective of a meaningful difference in clinical acumen would appear to be needed.

### Table I

<table>
<thead>
<tr>
<th>Statement</th>
<th>Median level of agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>My veterinary education prepared me for my career path</td>
<td>16</td>
</tr>
<tr>
<td>I am happy I chose veterinary medicine as my career</td>
<td>18</td>
</tr>
<tr>
<td>I am a professionally successful person</td>
<td>17</td>
</tr>
<tr>
<td>I consider myself a financially successful person</td>
<td>16</td>
</tr>
</tbody>
</table>

**Professional satisfaction of the graduates of the College of Veterinary Medicine of the Ohio State University, and the School of Veterinary Medicine, of the University of California, Davis**

Students were asked to rate their level of agreement with the following statements on a 19-point scale from ‘Strongly disagree’ (1) to ‘Strongly agree’ (19).
A further exploration of the perceived importance of comparative medicine expertise is provided by the responses graduates gave when asked to rank the following statements on a 'Strongly disagree' to 'Strongly agree' scale:

- ‘Competency in current day veterinary practice requires a detailed understanding of the clinical basis of disease across species’ (Fig. 5a)
- ‘Veterinary school training should provide all graduates with clinical competence in all species’ (Fig. 5b).

The Davis and Ohio graduates diverged somewhat more in response to these questions. The Davis students indicated that there was less of a need in current day veterinary practice for a detailed understanding of the clinical basis of disease across species (Fig. 5a), and, in parallel, less of a need for veterinary schools to provide all graduates with training and clinical competence in all species (Fig. 5b).

Both of these answers probably reflect the fact that most modern day veterinary practice is indeed restricted to just one or a limited number of species. However, the combined set of profiles of responses presented in Figures 4 and 5 from the Davis graduates appears to suggest that in their view while there is less of a need for knowledge of comparative medicine in actual practice, it is still nevertheless a critically important component of the training that has enabled them to reach the level of competence needed in their current practice. The Ohio graduates would appear to have appreciated the cross-species training they received.

As shown in the authors’ other paper on this subject (6), several years after graduation Davis and Ohio graduates have a very similar profile in terms of their areas of clinic practice. A key question to ask, therefore, is whether or not the higher ranking responses of the Ohio graduates on the set of questions directed at comparative medicine (Figs 4 and 5) is a consequence of their broader education in multiple species while in veterinary school. This appears quite possible, nevertheless comparative medicine understanding is clearly considered a valuable attribute for veterinary practice by both the Ohio and Davis graduates. For Ohio graduates it was a component of their education during all four years of their DVM programme. Often ignored, however, is that even in a tracking programme, such as was followed by the Davis graduates, comparative medicine is a fundamental element of their training for at least the first three years of their veterinary education. This has probably contributed significantly to their view of the key contribution of comparative medicine to veterinary medicine expertise, as can be seen in Figures 4 and 5.

**Preferences for training**

The survey explored the graduates’ preferences regarding the type of training they would have liked to have received and the type of training they look for in prospective associates. These data are detailed in Tables II to IV. The educational background favoured in the selection of a future employee was explored in Table II. Graduates were asked: ‘In choosing a new associate for the veterinary
**Fig. 4**
Assessment of the importance of key attributes for new graduates and for veterinarians 10 years after graduation

**a) New graduates**
- Physical examination skills across species
- An understanding of disease processes across species
- An understanding of comparative medicine across species

**b) Veterinarians 10 years post graduation**

Graduates of the University of California, Davis
Graduates of the Ohio State University
Combined

△ Graduates of the University of California, Davis
◇ Graduates of the Ohio State University
■ Combined
practice in which you work, if all other aspects are equal which candidate would have the stronger clinical problem solving skills for the species you see in your clinic?” Five possible answers were provided and respondents were asked to indicate whether they would ‘definitely’ or ‘most probably’ choose a new graduate who had trained in a tracking curriculum, or whether they would ‘definitely’ or ‘most probably’ choose a new graduate who had trained in a broad mixture of species curriculum, or whether the range of species would make no impact on their decision. (See Table 2 for full wording of the survey question.) Thirteen percent of Davis graduates and 18% of Ohio graduates thought that the range of species worked with has no impact on clinical problem-solving skills attained. Of the remainder, 89% of the Davis graduates considered that a new graduate, who had trained in a veterinary school where the clinical training concentrated on just the species that they see in their practice would have the stronger clinical problem-solving skills for the work in that clinic. The view of the Ohio graduates was quite distinct (p<0.001). Excepting those who thought it made no difference, the Ohio graduates actually slightly favoured the Davis type programme (51% versus 47.7%) for producing the potential future employee with the stronger clinical problem-solving skills for working with the species they see in their clinic.

The data of Table III further supports the conclusions derived from the data of Table II. Survey participants were asked: ‘In choosing a new graduate as a new associate for the veterinary practice in which you work, if all other aspects are equal which would you choose?’ Respondents

<table>
<thead>
<tr>
<th>Answer options</th>
<th>Ohio graduates who gave this answer</th>
<th>Davis graduates who gave this answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definitely, a new graduate who had trained in a veterinary school where the</td>
<td>Number</td>
<td>Percentage</td>
</tr>
<tr>
<td>clinical experience in the final year(s) concentrated on the same one or two</td>
<td>125</td>
<td>13.7</td>
</tr>
<tr>
<td>species that you see in your practice (i.e. had tracked)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most probably, a new graduate who had trained in a veterinary school where</td>
<td>255</td>
<td>28.0</td>
</tr>
<tr>
<td>the clinical experience in the final year(s) concentrated on the same one or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>two species that you see in your practice (i.e. had tracked)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The range of species worked with has no impact on clincial problem-solving</td>
<td>168</td>
<td>18.4</td>
</tr>
<tr>
<td>skills attained</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most probably, a new graduate who had trained in a veterinary school where</td>
<td>246</td>
<td>27.0</td>
</tr>
<tr>
<td>the clinical experience in the final year(s) was obtained with a broad mixture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>of species (small companion animals, equine and food animals)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Definitely, a new graduate who had trained in a veterinary school where the</td>
<td>117</td>
<td>12.8</td>
</tr>
<tr>
<td>clinical experience in the final year(s) was obtained with a broad mixture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>of species (small companion animals, equine and food animals)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chi² analysis: Ohio and Davis responses are significantly different, p<0.001
were asked to indicate if they would choose a new associate whose clinical experience was concentrated on the same one or two species as in their practice, or one whose clinical experience in veterinary school was obtained with a broad mixture of species. A little fewer than a third (25% to 30%) of Ohio and Davis graduates indicated that the type of training of a veterinary graduate would not be an issue for them in considering the possible employment of a new associate. Of the ~70% of each who indicated it would make a difference, the number of Davis graduates who would have chosen the associate who had tracked was four times higher than the number of Davis graduates who would have chosen the associate who had had a multi-species clinical training (Table III). In contrast, Ohio graduates indicated that they would choose about equally from those with these two different types of clinical training.

Taken together the data of Tables II and III suggest that there is some considerable support for hiring a new associate who has training more specifically with the species seen in the practice site (p values <0.001), rather than a candidate with a more distributed training with multiple species.

This issue was yet further examined by using an alternative type of question. Table IV shows the Yes/No responses given by the Ohio graduates when asked to indicate whether or not they agreed with the statement: ‘In retrospect, I would have preferred if my alma mater veterinary school had had a system of clinical tracking when I attended’ and the responses of the Davis graduates to the statement: ‘In retrospect, I would have preferred if my alma mater veterinary school had not had a system of clinical tracking when I attended’. The data of Table IV show that a notable number (although not a majority) of Ohio graduates would have opted for a tracking curriculum (p<0.001), a profile in line with their response of the type of associate they would hire (Tables II and III). Markedly fewer Davis graduates (13% versus 30%) would have opted for a broader-based clinical education.

### Table III

Graduates were asked ‘In choosing a new graduate as a new associate for the veterinary practice in which you work, if all other aspects are equal which would you choose?’

<table>
<thead>
<tr>
<th>Answer options</th>
<th>Ohio graduates who gave this answer</th>
<th>Davis graduates who gave this answer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percentage</td>
</tr>
<tr>
<td>A new graduate who had trained in a veterinary school where following the</td>
<td>313</td>
<td>33.5</td>
</tr>
<tr>
<td>preclinical education the clinical experience in the final year(s) was</td>
<td></td>
<td></td>
</tr>
<tr>
<td>concentrated on the same one or two species as your practice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A new graduate who had trained in a veterinary school where following the</td>
<td>322</td>
<td>36.3</td>
</tr>
<tr>
<td>preclinical education the clinical experience in the final year(s) was</td>
<td></td>
<td></td>
</tr>
<tr>
<td>obtained with a broad mixture of species (small companion animals, equine and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>food animals)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>It would not be a consideration for me</td>
<td>281</td>
<td>30.0</td>
</tr>
</tbody>
</table>

Chi² analysis: Ohio and Davis responses are significantly different, p<0.001

### Table IV

Graduates were asked ‘Please respond to the question (a) or (b) depending upon which one applies’

<table>
<thead>
<tr>
<th>Statement</th>
<th>Yes Number</th>
<th>Yes Percentage</th>
<th>No Number</th>
<th>No Percentage</th>
<th>Number who gave no answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ohio graduates</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) In retrospect, I would have preferred if my alma mater veterinary</td>
<td>285</td>
<td>30.1</td>
<td>652</td>
<td>68.9</td>
<td>24</td>
</tr>
<tr>
<td>school had had a system of clinical tracking when I attended</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UC Davis graduates</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) In retrospect, I would have preferred if my alma mater veterinary</td>
<td>92</td>
<td>13.0</td>
<td>610</td>
<td>86.4</td>
<td>27</td>
</tr>
<tr>
<td>school had not had a system of clinical tracking when I attended</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chi² analysis: Ohio and Davis responses are significantly different, p<0.001
Licensure

Several issues about veterinary licensure are raised by the debate about the benefits versus the deficits of the two different approaches to clinical training used in veterinary schools today. Irrespective of the type of training a veterinarian has received (a tracking curriculum or a broader curriculum), virtually all working veterinarians (>95%) specialise in an often quite narrow area of veterinary medical practice/endeavour (see data presented in the authors' previous paper [6]). With so little information available about the benefits of the two types of training programmes (excepting these current two papers), accreditation and licensing bodies have acted more upon conjecture than on hard facts.

There was strong consensus among Ohio and Davis graduates that 'Practicing in one area of veterinary medicine for many years substantially reduces a veterinarian’s ability to practice competently in a different area' (Fig. 6a). These same graduates, however, were either ambivalent or totally against the concept of re-licensing veterinarians at least every 10 years (Fig. 6b). They were similarly ambivalent or totally against the idea of adopting clinical licensure that is limited to a species or group of species (Fig. 6c). Although there was a notable divergence between the Ohio and Davis graduates, most considered that 'The education of a veterinarian should equip them to obtain a license that will permit them to change careers into other fields of veterinary medicine throughout their veterinary career' (Fig. 6d). Although virtually all veterinarians specialise in a particular area of veterinary medicine, and from this data this would appear to lead to a lower level of competence with time in other areas (Fig. 6a), a large group of practicing veterinarians are still

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**Fig 6**
Graduates’ views concerning limited and time-dependent licensure

- ▲ Graduates of the University of California, Davis
- ◊ Graduates of the Ohio State University
- ■ Combined
primarily against any form of re-licensure (Figs 6b, 6c and 6d). This is grist for considerable debate and there are several perceptions as to why there is this apparent discrepancy. This data is probably coloured by a natural reluctance to undertake re-licensing; but there is clearly enough divergent opinion to begin a debate about what might be in the best interest of the profession. How important is it to receive an encompassing education when with time the breadth disappears because of naturally chosen specialisation?

Conclusion

These two companion papers now provide considerable data, that has heretofore been unavailable, on the outcomes of the two major types of clinical curriculum that are prevalent in veterinary education around the world. A variety of conclusions have been made throughout these papers but simultaneously a breadth of issues for discussion has been raised. Certainly support is provided here for a clinical training programme in which students concentrate in at least their final year curriculum on just the species that they intend to work with in practice upon graduation. The fear that a broad spectrum of veterinarians makes a major change in their area of specialisation during their practice years appears unfounded. Most changes that occurred were far more of a gradual transition than a radical change to quite a different area of species specialisation (6). For half of the changes made the individual needed no substantial retraining (or rather made no choice for further training) (6). The major reason for change was a personal or family issue and one might argue that it is the responsibility of the individual rather than the profession to ensure that such a change is possible. In virtually every other profession when a change is made for personal or lifestyle reasons it is believed to be the individual's responsibility.

The argument has been voiced that veterinary medicine has its fundamental base in comparative medicine and that there are certainly conceptual reasons as to why this is likely so. The question to be addressed is when and how this fundamental base should be achieved during veterinary education. On the basis of the data provided here one might argue that a sound fundamental base was achieved by the Davis students prior to their entry into their species-directed training. The Davis graduates certainly indicated a solid appreciation for the comparative veterinary education they received. So the question to be resolved is not necessarily when and how the fundamental base should be achieved, but to what level it needs to be achieved for a veterinarian practicing species-restricted veterinary medicine, as virtually all are. The Ohio graduates ranked the importance of comparative medicine somewhat higher than did those from Davis.

In all educational programmes compromises are struck between the balance of training received in diverse areas. This is true for engineers, educators, investment bankers and human medicine practitioners as indeed it is for all professions, including veterinarians. One key balance to attain in the training of veterinarians is that between general broad-based veterinary competence, and the base of knowledge and understanding needed for the specific species-directed veterinary practice. All veterinarians must also gain a firm understanding of areas such as population and global public health, food safety and security.

Currently, one major argument for maintaining broad comprehensive multispecies training throughout veterinary education is the regulations of accrediting bodies and credentialing agencies, which emphasise multispecies competency. Given the data provided in these two papers and the significant shift in education models, particularly the development and retention of tracking systems, it would seem that the accrediting and credentialing agencies may need to re-evaluate this issue. Arguments can be made about whether such agencies should take a leadership or reactionary role regarding these issues but what is important is that a full scope of understanding and knowledge must be brought to bear on the decisions.

These current two papers are the start of a solid base of knowledge on the issues of tracking versus a general multi-species veterinary education. Certainly two papers do not sufficiently provide the base of knowledge that is needed but hopefully they have expanded a general awareness of the issues. A crucial new awareness is that the scope of veterinary practice is expanding and it is essential that there be a route for training to occur in each of the areas of veterinary practice, so as to create the workforce necessary to encompass all the responsibilities of the veterinary profession in the service of humanity. One critical area and the subject of this entire group of papers (8) is that of global public health. Keen decisions must be made as to how the separate yet coordinated workforces needed to meet these needs are created. Is tracking or a broad-based education the way to reach such goals? Our major objective in creating this set of two papers is to raise the awareness of the issues that must be addressed with a hardcore broad base of data.

Acknowledgements

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and seven hundred and forty-four UC Davis graduates completed the survey that forms the base of knowledge of this and the preceding paper; their time, effort and forethought in completing the survey are very gratefully acknowledged.

Les différents types d’organisation de l’enseignement vétérinaire : filière de spécialisation ou dernière année d’expérience clinique multi-espèces. Deuxième partie : les valeurs transmises

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Résumé
Cet article (le second d’un diptyque consacré à ce sujet) présente les conclusions de la première grande étude jamais réalisée sur l’impact des deux principaux types d’organisation de l’enseignement clinique dispensé aux étudiants en médecine vétérinaire. Le premier type de formation consiste à doter les étudiants d’une expérience générale recouvrant de nombreuses espèces animales, tandis que la deuxième vise plutôt à transmettre des connaissances approfondies relatives à l’espèce animale à laquelle les futurs vétérinaires veulent consacrer leur pratique professionnelle (cette dernière approche étant donc centrée sur une filière de spécialisation). L’étude a recueilli les réactions de diplômés de deux écoles vétérinaires, qui représentent respectivement les deux types précités d’organisation de l’enseignement. En tout, 1 714 étudiants ont participé à l’enquête et répondu à des questions sur leur parcours professionnel, leur niveau de satisfaction professionnelle et leur appréciation de la formation qu’ils ont reçue, en particulier dans le domaine de la médecine vétérinaire comparée. Il leur a également été demandé s’ils n’auraient pas préféré un autre type de formation, et quel serait le profil qu’ils choisiraient s’ils avaient à recruter un associé (issu d’une formation centrée sur une filière de spécialisation ou d’une formation généraliste). Les études montrent que la plupart des inquiétudes suscitées par les filières de spécialisation ne correspondent pas à la réalité. Dans plus de 90 % des cas, les jeunes vétérinaires choisissent d’exercer dans un domaine restreint de la médecine vétérinaire ; très peu de vétérinaires changent de filière au cours de leur vie professionnelle, et s’ils le font c’est essentiellement pour des raisons d’ordre privé ou de cadre de vie. Il semble donc pertinent de s’interroger sur l’intérêt de l’enseignement préclinique général tel qu’il est traditionnellement proposé, et sur l’utilité de faire acquérir aux étudiants une expérience clinique auprès d’espèces animales qu’ils n’ont pas l’intention d’inclure dans leur pratique professionnelle.

Mots-clés
Enseignement par filière – Enseignement vétérinaire orienté sur la carrière – Omni-compétence.
Dos concepciones de la enseñanza veterinaria: experiencia clínica con énfasis por especie frente a genérica. Segunda parte: valores inculcados

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Resumen
Este es el segundo de dos artículos en que los autores describen el primer gran estudio sobre los resultados de dos concepciones generales de lo que debe ser la formación clínica de los estudiantes de veterinaria. Una de esas concepciones pretende proporcionar al alumno una experiencia genérica con varias especies, mientras que la otra apunta a dispensarle una formación mucho más sólida con la especie a la que el estudiante tiene pensado dedicarse tras obtener el título (esta última sigue una línea de estudios particular y especializada). Para realizar el estudio se recabó la opinión de un gran número de titulados de dos facultades, cada una de ellas representativa de una de esas dos maneras de entender la enseñanza de la veterinaria clínica. Participaron en la encuesta un total de 1,714 estudiantes, a quienes se solicitó información sobre su trayectoria y su nivel de satisfacción profesional y se pidió que evaluaran la formación recibida, especialmente en medicina veterinaria comparada. También se les preguntó si habrían preferido un tipo distinto de formación y si tenderían a elegir como socio a un titulado de una formación especializada o a uno de formación general. El subsiguiente análisis parece invalidar unas cuantas de las críticas vertidas sobre la formación con énfasis por especie. Una vez obtenido el título, más del 90% de los veterinarios ejercen en una parcela muy reducida de la medicina veterinaria. Por ello debemos plantearnos si de verdad resulta beneficioso impartir la clásica enseñanza preclínica, de carácter muy general, y formar a los estudiantes en la práctica clínica con animales a los que no piensan dedicarse una vez titulados.

Palabras clave
Competencia omniclínica – Enseñanza veterinaria basada en la actividad profesional – Formación con énfasis por especie.

References


