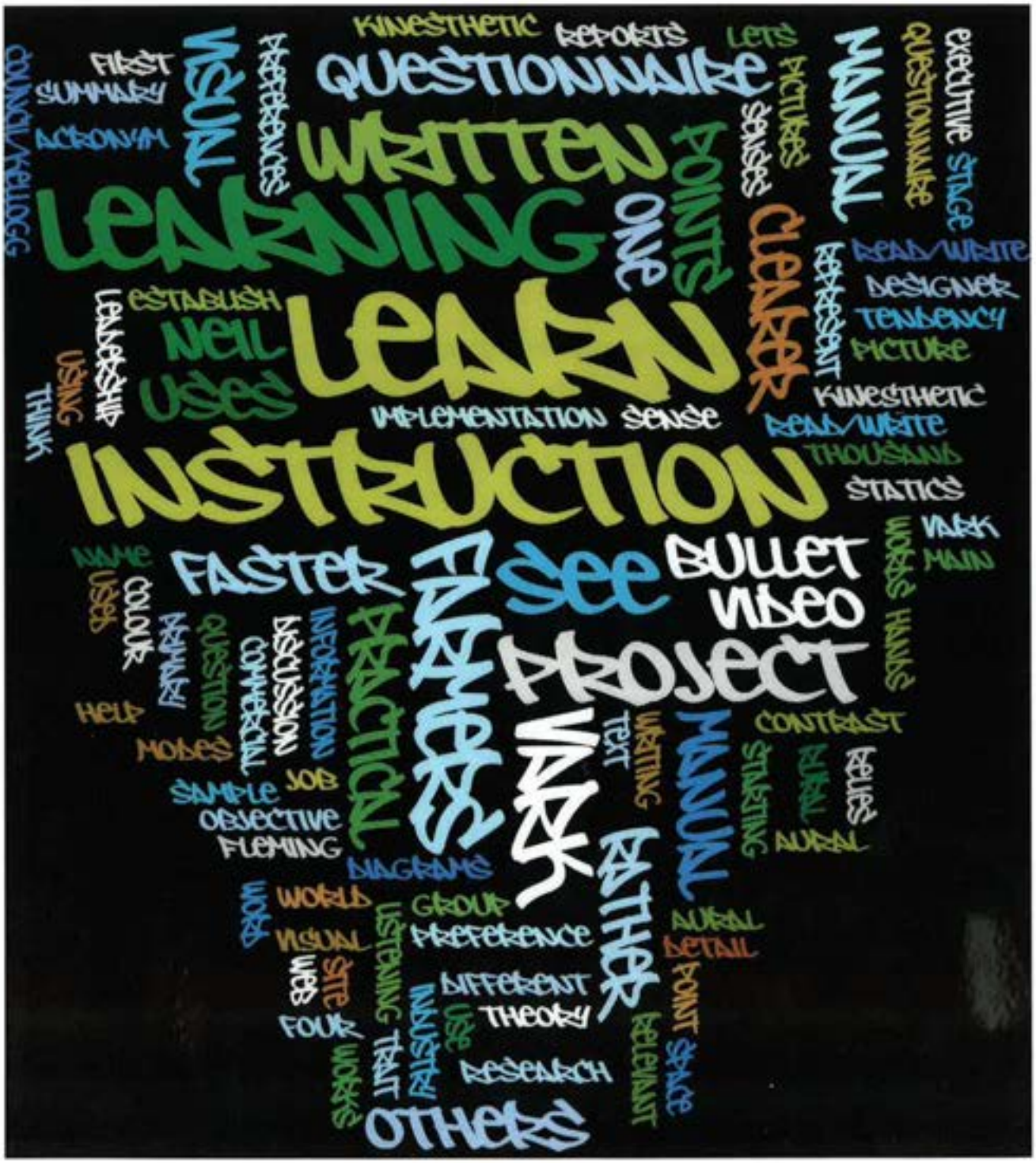
A picture is a thousand words



"Primary Industry Council/Kellogg
Rural Leadership 2011"

Gary Stokes

Contents

My Research Question is: Do we learn faster and clearer from a video instruction manuals rather than a writing instruction Manuals

Introduction

The name of my project is '*A picture is a thousand words*'. I have chosen this name because I think we learn faster and clearer from video instruction Manual compared to written manuals. We learn faster through video recording because it allows us to use all our senses in comparison to written manuals, which only rely on learning through one sense.

The main objective of the project is to see if this theory works in the commercial world while looking into the idea that farmers learning preferences may differ from others commercial work forces. My first stage was to use the Vark questionnaire to see what learning preference farmers had.

Step one: What is VARK?

Neil Fleming (Designer of the VARK Questionnaire) uses the acronym VARK to represent the four learning modes; these are Visual, Aural, Read/Write and Kinaesthetic.

VISUAL: Visual using space, colour, diagrams, pictures, bullet points, contrast to learn

AURAL: The listening and discussion with others

READ/WRITE: The written word, text, reports, information written more in detail than bullet points.

KINAESTHETIC: 'Lets do it', practical, hands on, relevant, on job instruction and learning by practical implementation.

The questionnaire was used only as a starting point for my project to establish if farmers had a tendency for one trait over the sample group from statics that Neil has on his web site.

TABLE FIVE: Groups and the percentage of V, A, R and K Options Chosen. January 2010.

This table is compiled differently from Table Five. Here we have the percentages for the total numbers of options chosen for various populations. For example, Females, numbering 25432 chose 20.4% of their options from the Visual choices, 24.3% from the Aural choices etc.

	V	A	R	K	n=
Total	***20.5***	***24.7***	***27.1***	***27.8***	***40228***
Females %	20.4	24.3	27.8	27.6	25432
Males %	20.6	25.5	25.6	28.2	13109
Students	20.4	24.8	26.9	27.9	35537
Teachers	21.0	22.9	29.0	27.1	2338
Applied Science	20.7	23.6	27.6	28.2	1130
Architecture	23.9	23.9	23.9	28.3	265
Art	22.3	24.5	24.4	28.7	989
Business	20.2	25.2	27.4	27.1	4349
Computing	20.9	23.5	28.3	27.3	1089
Education	20.2	24.8	26.9	28.0	3579
Engineering	22.2	24.0	25.3	28.5	1191
Humanities	18.8	25.4	28.7	27.1	946
Languages	20.3	26.7	26.8	26.2	404
Law	19.2	25.3	28.3	27.2	1201
Mathematics	21.9	24.1	27.0	27.0	535
Medical	20.3	24.1	27.5	28..1	10820
Performing Arts	20.1	27.1	24.5	28.3	357
Science	21.8	24.0	26.7	27.6	3261
Social Science	19.5	25.2	27.8	27.5	1648
Sport	21.2	26.1	23.1	29.6	766
Other	20.0	25.5	26.5	27.9	5477
High School	20.7	25.7	25.6	28.0	3035
Two Year College	20.1	24.5	27.5	27.9	15453

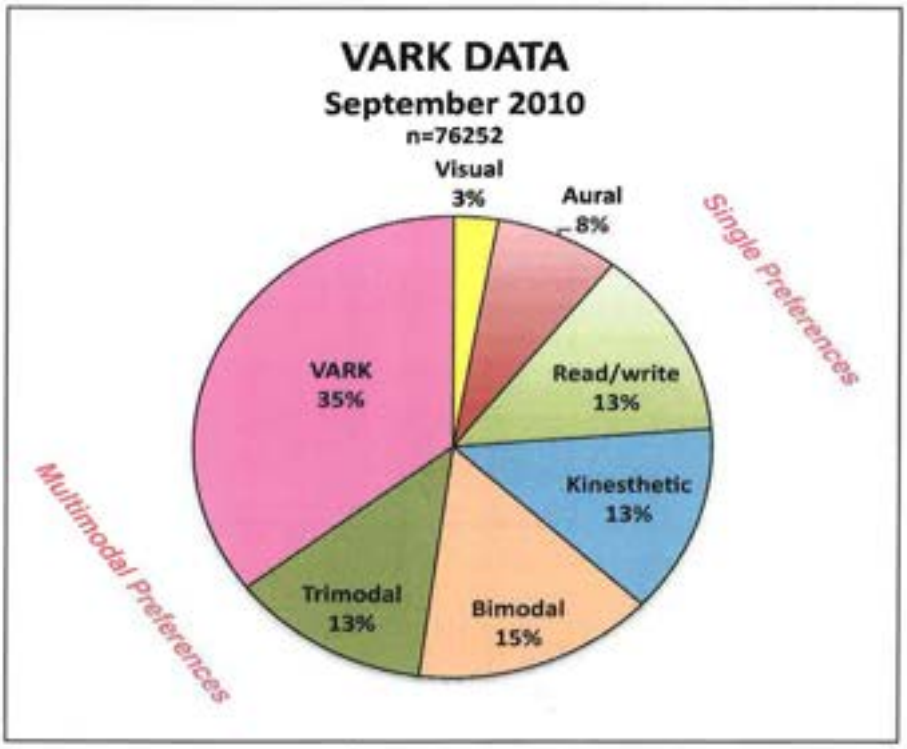
Four Year College	20.5	24.8	26.6	28.2	6065
University	21.0	24.7	26.6	27.7	10356
Other	20.3	25.7	25.6	28.0	3169
In Education	20.6	24.7	26.9	27.8	35362
Not in Education	19.6	24.4	28.4	27.6	2625
Used VARK Before	20.7	24.5	26.8	28.1	3922
First Time User	20.4	24.7	27.1	27.8	35485
Age under 18	21.4	25.8	24.4	28.4	5910
Aged 19 to 25	21.0	25.1	25.5	28.4	17049
Aged 26 to 34	20.0	24.2	28.5	27.4	7437
Aged 35 to 44	19.2	23.5	30.3	27.0	4958
Aged 45 to 54	18.9	23.8	30.8	26.5	3076
Aged 55+	19.1	23.4	31.9	25.6	1105
Matches my perception	21.3	23.8	27.1	27.9	22644
Does not match my perception	18.3	26.6	27.9	27.2	1779
Don't Know How I Learn	19.4	25.9	26.9	27.8	14179
Africa	19.9	24.3	28.4	27.3	149
Asia	21.0	26.6	26.2	26.2	599
Canada	21.8	26.6	26.2	26.2	873
Europe	20.6	26.4	25.7	27.3	473
Middle East	22.3	25.3	25.1	27.3	87
Oceania	21.8	23.0	27.4	27.9	345
South America	20.5	25.6	26.3	27.7	135
United Kingdom	20.3	25.0	27.3	27.3	2458
USA	20.4	24.6	27.1	27.9	34278
Test group of farmers by Gary Stokes					
Female Farmers tested	17.9%	22.8%	33.8%	25.5%	8
Male Farmers tested	19.3%	25.0%	19.9%	35.9%	25
All farmers tested	19.0%	24.5%	23.1%	33.5%	33
Results from Wendy Gib Kellogg project					
Farmers	23.6%	23.6%	22.2%	30.6%	5

Conclusions from the Vark questionnaire:

The results from the Vark questionnaire are only from a small selected group of farmers but combined with the results from Wendy Gib(*Kelloggs project 2010*).We can see how overall farmers tend to lean towards Kinaesthetic learning compared to most people surveyed. They were less likely to choose the read/Write options especially in the case of male farmers. When the female farmer's results were taken in isolation they showed that, they tended to lean towards the read/write leaning preference. The female farmers surveyed were mostly farmer's wives, who were not the primary labour force.

As the Vark test results point out in Figure 1, most people have more the one learning preference.

Figure 1 *(Vark web site)*



It is not unexpected that most people having more than one learning preference, due to the fact that as young children we have a natural sense to learn from watching and listing to what other people do and mimic. This is our first learning experience and this innate behaviour uses three of the four learning preferences.

Step 2:

This step involves finding out what is the best format and key elements needed to make an ELearning video.

There have been a couple of studies done on demonstrational videos. The first case study conducted by Felton, Keesee, Mattox, McCloskey and Medley (2001) compared the effectiveness of text-based material and demonstrational videos. This study involved three groups of students. The first group of students viewed a video of a

manufacturing process, the second group read text that explained the process while a third group watched an unrelated video which served as a control. Post-test scores revealed a statistically significant improvement for the first group only. The second study conducted by Michas and Berry (2000) tested the bandaging performance of five groups of students who learned from text, drawings, text plus drawings, video film, or still pictures. Of these five groups, the video and the text plus drawings groups performed significantly better than the others. The authors concluded that the dynamic presentation of information afforded by video allowed learners to develop a better mental model of the bandaging task.

Theories within cognitive psychology emphasize learning from more than one modality source (e.g., Paivio, 1986; Mayer, 2001).These theories contend that humans actively process information and that there are separate systems for processing visual and verbal representations. This is done by first attending to the relevant information, next by mentally organizing it into coherent representations, and finally by integrating these representations (Mayer, 2001). Thus, one might expect that a video presentation, which activates both visual and verbal channels, may lead to better learning outcomes if integration between narrative and educational contents is complementary. In the same vein, Zollman and Fuller (1994) argued that video presentation provides several paths of retrieval cues. While this might be true of demonstrative and narrative video, it is questionable whether this is true for video recordings of lectures. It is not clear if students benefit from this type of video since the visual modality contributes almost nothing.

The design of the video is very important in the success of the ELearning experience. Jeremy Vest (*Chief learning officer of Splash Media and author of "Exploring Web Design.")* points out the **7 Sins of Online Video Instructional Design.** With the popularity of video sites such as YouTube, which now accounts for 25 percent of all searches on the Web, the consumption of video training is now a reality in most

organizations and colleges. This accessible forum has made it easier for organizations to produce and provide online training videos. While this technology is available to anyone, companies do need to take time to consider the quality of the online training videos they are producing and providing. The following will give you a perspective of common, yet avoidable, mistakes most companies make when creating online training videos:

The 7 Sins of Online Video Instructional Design

1. Not connected to learners

Have the subject matter expert (SME) address the camera, and do not just show screen shots. Change up shots; do not keep static too long. The more impersonal you make your training videos, the less likely your learners will feel a connection to the SME. This will cause a less engaged overall learning experience.

2. Poor planning before the shoot

If you are using a SME, make sure they are prepared for the day of the shoot. Ask them to give you a plan that details each three to seven-minute video unit weeks prior to the day of the shoot. Make sure they practice; in particular, you might want them to practice live with you via Web cam. If they are using any type of presentation, make sure it is designed well and check for any grammatical errors. Finally, make sure the SME understands how to dress and look for taping.

3. Video length is too long

Would you like to sit down and watch a 30-to-60 minute video clip? Neither would your learners! Three to seven minutes seems to be the optimum length

for online video learning. Most large online training companies have moved, or are preparing to move, to this format.

4. No close captioning

Close-caption all of your videos. It's good for the disabled, good for compliance, and good for search engine results. It can be expensive, and not always practical, but when possible it is a best practice to close caption your video

5. Video and delivery is poor quality

Use a reliable service to deliver your streaming video. This will ensure proper video delivery worldwide. Make sure the video is not too low or high quality for download. The video player should be simple to use, and should buffer before playing.

6. No comprehension

Keeping with the basic rules of the adult learning model, make sure your audience understands what they just watched and why. Remember, knowledge transference is a major reason they are watching the video. Offer end-of-course tests and reviews; this will ensure learners are really learning something, and that they will retain the information.

7. No Hands-on lessons

Task your learners with hands-on lessons. Keep the lessons practical. Remember adult learners respond to relevancy-oriented training. Offering online self-paced autonomous training can greatly improve a company's overall training system.

conclusions

My conclusions from the Elearning studies are that there is no difference between a video presentation and a live presentation. The presenter in both formats has to engage the audience. If the video speaker fails to engage the audience, it is very easy to push the stop button and lose the audience. Whereas with a live presenter they can reengage the audience if they see them drifting off. It is very important with video presentations that the presenter is an expert on the subject. It is also important to have a well-prepared storyboard which has good structure and a strategic flow. If the video does not have this flow, you can confuse the audience, which would devalue the learning process.

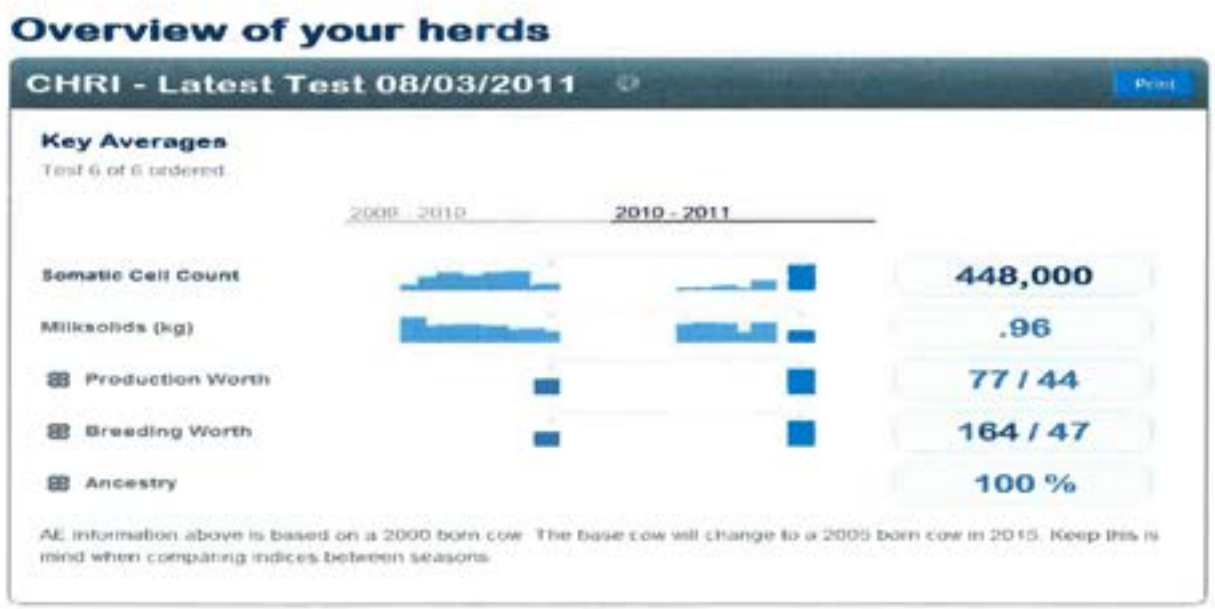
The video presentations need to be no longer than 3 to 7 minute segments. This allows the video presenter to encourage the audience to try the learning skills they have just leant and keeps them engaged. By making the video in short segments means that the audience can quickly reference the parts of the video that they feel they need to focus on. In the past the first Elearning videos did not have segmentation which was one of the main reasons that people tended not to use the technology. They found it easier to go to a textbook rather than rewind the whole video to find the information they needed.

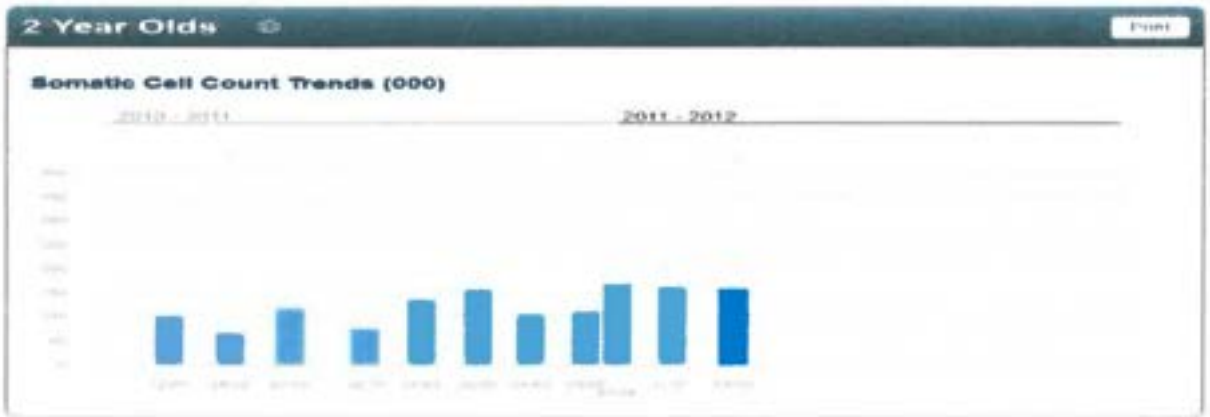
The information from the Vark survey showed that farmers tend to be a little more Kinaesthetic. This means that videos developed for farmers needed to have segments that pause and encourage them to practise what they have just seen on the video, which should embrace there Kinaesthetic tendency.

Case Study

This survey involved seven participants: two females and five male. The positions of the farmers varied from farm management to farm owners. There were three farm owners, two 50% sharemilkers, one lower order sharemilker, and one farm manager.

The aim of the study was to see whether farmers preferred text or Video instructions. Below are some of the video screen shot.

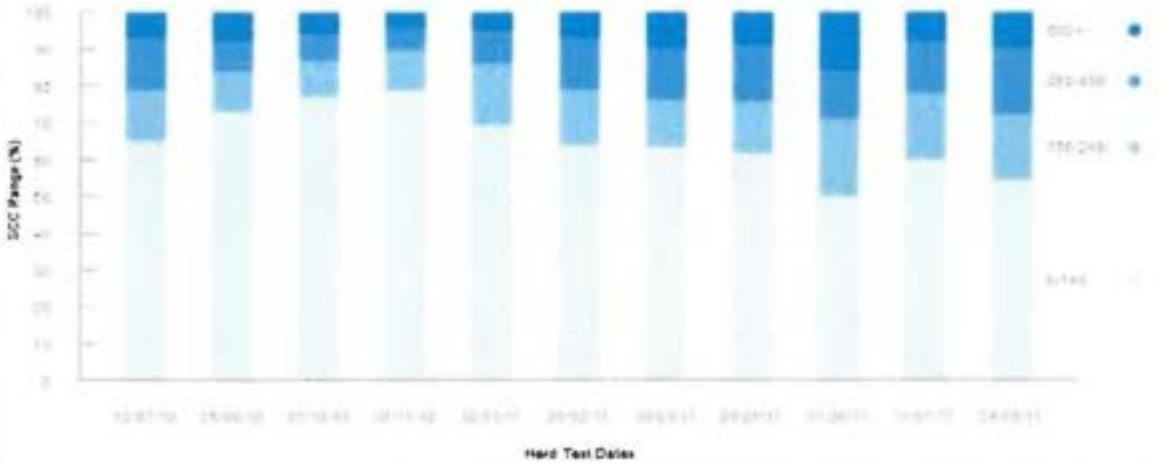




SCC Ranges For Whole Herd

Print

Ranges



Range (000)	Jul 2010		Aug 2010		Oct 2010		Nov 2010		Jan 2011		Feb 2011		Mar 2011		May 2011		Jun 2011		Jul 2011		Aug 2011	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
0-149	134	65	190	73	253	77	217	78	193	70	177	64	282	54	239	61	163	50	159	60	147	55
150-249	28	14	29	11	34	10	32	11	46	17	41	15	42	15	56	14	68	21	50	19	47	18
250-499	28	14	21	8	23	7	18	6	25	9	39	14	43	14	60	15	41	13	40	14	47	18
500+	15	7	20	8	19	6	12	4	13	5	20	7	31	10	36	9	51	16	21	8	26	10
Total Animals	205		260		329		279		277		277		318		391		323		260		267	
Est. Bulk Count	245		165		167		119		148		162		203		220		265		200		153	

The text below is the paper format that was used by the farmer participants in the case study. As you will see the text format also has pictures to illustrate the program.

Click on the MINDA Home icon on your desktop to access your valuable information

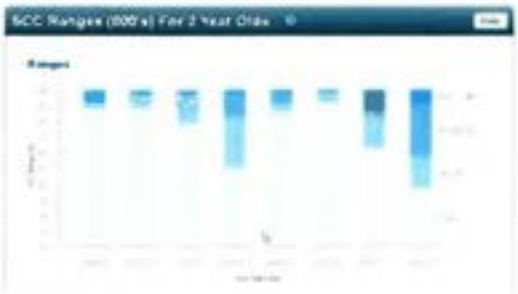
MINDA MILK

Overview

The overview screen provides key trends and averages for the herd. The bars represent each herd test, and the key averages for the dark shaded bar are shown to the right. This average information will typically be for your most recent herd test, but you can click the Previous Test button on the top right to see historical averages. To see more detailed information you can either click on the average value, on the trend graph or use the tabs at the top.

SCC

Under the SCC tab you can see more detailed information about the trends in SCC between different herd tests. By clicking on the individual bars you can see what the actual record was and how many animals were at that test.
This information is available for your whole herd, as well as your 2-year olds.



SCC Ranges

In the SCC Ranges graph you can see the percentage of the herd in the healthy (1-149,000) to unhealthy ranges (above 150,000). The larger the lighter area of the bar, the healthier the herd, as the bar becomes predominantly darker this is indicating higher levels of infection within the herd. Once again this information is available for your whole herd and the 2-year olds.

Things to note:

- Access via MINDA Home
- More data (tests) = a more complete picture
- FREE when you Herd Test with LIC
- Click at any time for help
- Accumulated lactation now available for less than 4 test

Production vs. Infection

Animal By Animal Detail

Best and Worst

Under the Best and Worst tab there is a customisable graph of each individual animal's PW versus their SCC record from the last test. On the graph each dot represents an animal, and by clicking on a dot it will show you which animal this is. When you click on one of the quadrants within the graph (e.g. 'Treat?'), all the information relating to the animals within that quarter will be shown in a table below the graph. When you click 'Customise' on the top left you can change the position of the quarters on the graph. This allows you more flexibility in narrowing down the information you are interested in seeing.

Production

Under the Production tab you can see information about Production Worth, Milksolids production (including a breakdown of Fat and Protein) and any Unusual Trends or Production Patterns from the herd test. The Production Worth (PW) by Age Group graph provides information about average PW for each age group. The graph can highlight any trends, and also age groups that are, or are not, contributing to improving the average herd PW. Clicking on each bar will show you what the average PW is and how many animals are in the age group.

In the Milksolids Summary Graph you can see trends in change in milksolids, fat and protein for both the whole herd and the 2-year olds. Click on each of the smaller trend graphs to see the information in the large graph, and you can click on the individual bars in the graph to see more information.

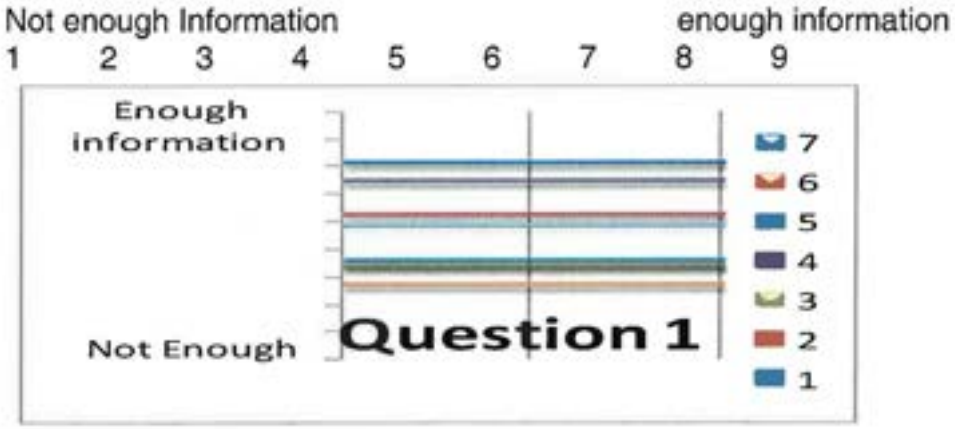
Animal Detail

Under the Animal Detail tab you can see a wide range of information about your animals. In this table you can filter by breed and age group, and you can also customise to see the information you are interested in by clicking on 'Customise Columns'. By clicking on column headers in the table you can sort the information in the table relative to the values in that column.

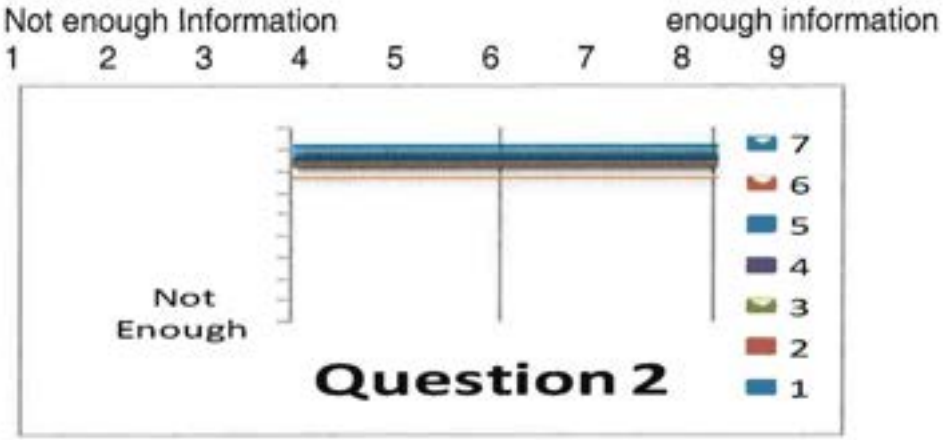
Survey

In the case study, I asked the farmer participants 10 questions. The answers are graphical illustrated below each question.

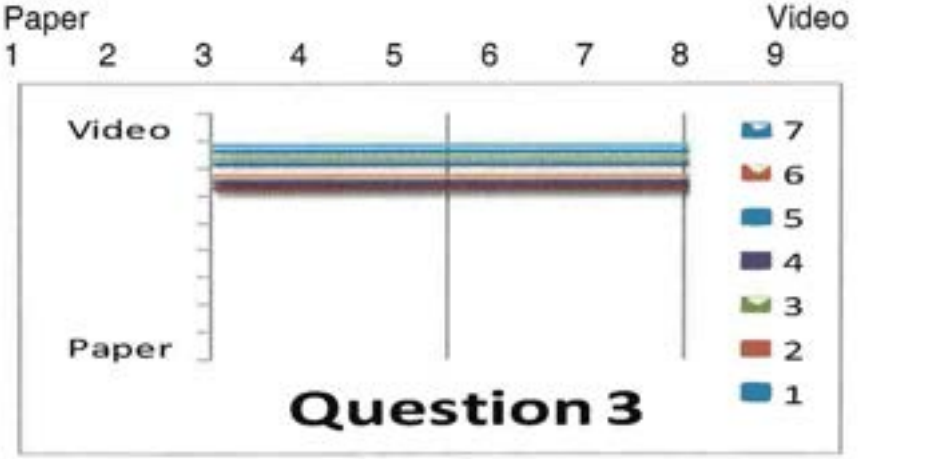
1. Did you find that paper instructions had enough information?



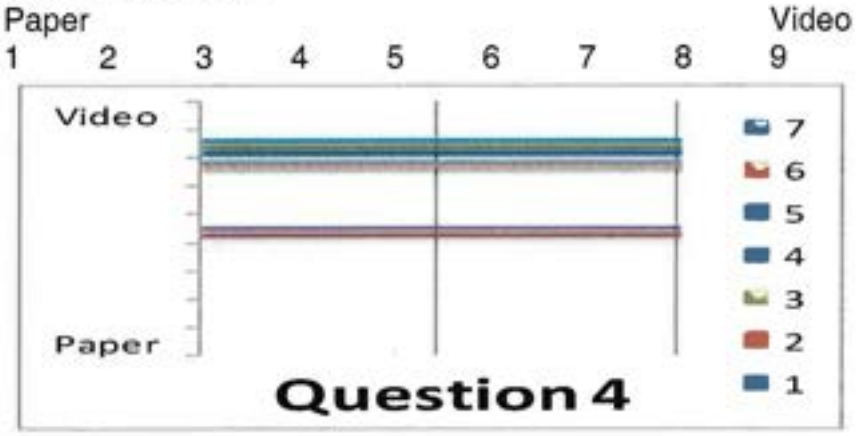
2. Did you find that Video instructions had enough information?



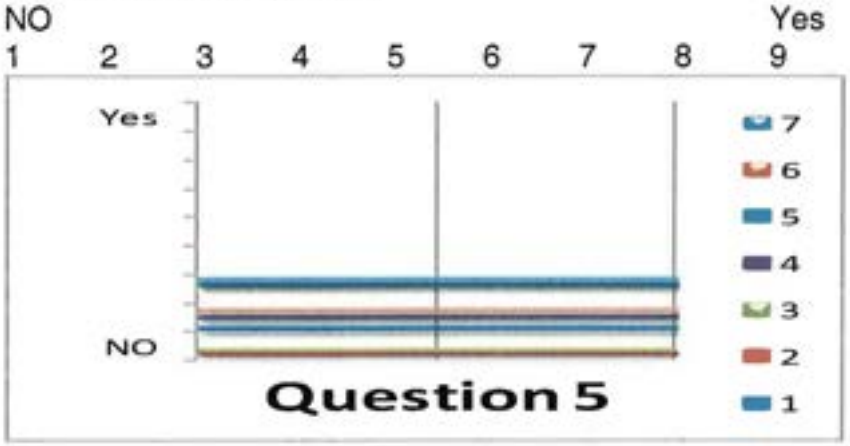
3. Which format did you feel more comfortable with?



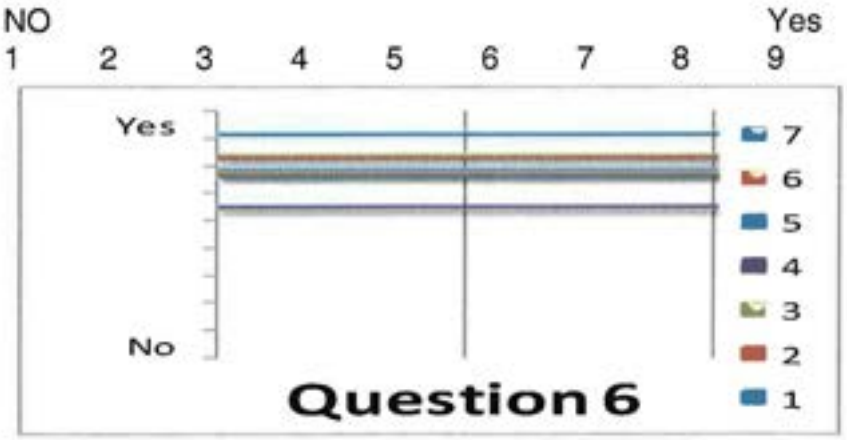
4. Do you think you would be more likely to use the program if you had a Video or paper instructions?



5. Did you find the Video to long?

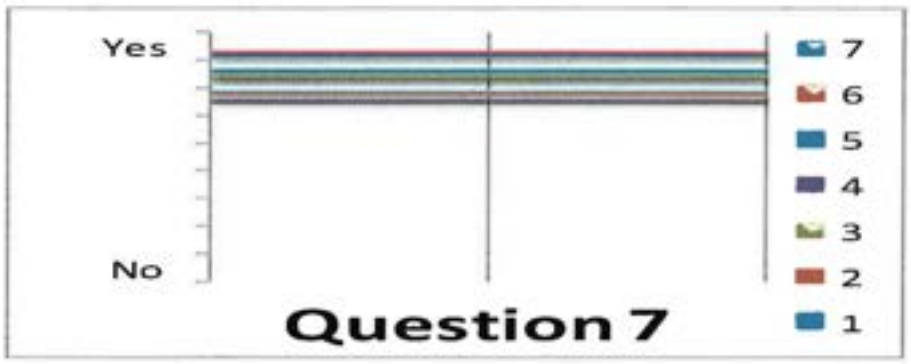


6. Would you prefer the video in segments that allowed you to try what you just learnt?



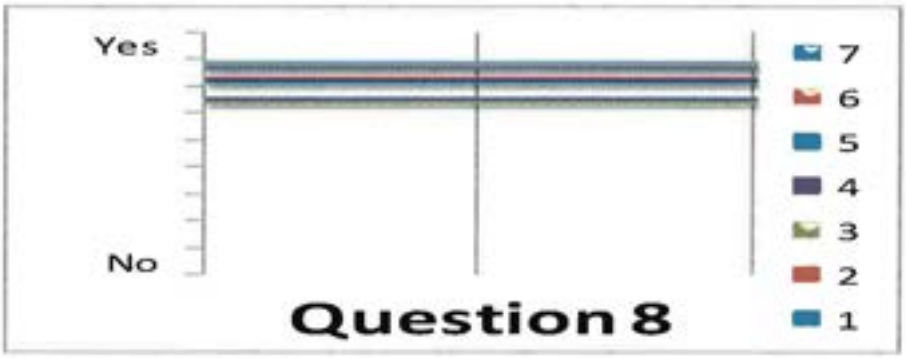
7. Would you like more Video instructions if it were in the segmented format?

NO 1 2 3 4 5 6 7 8 9 Yes



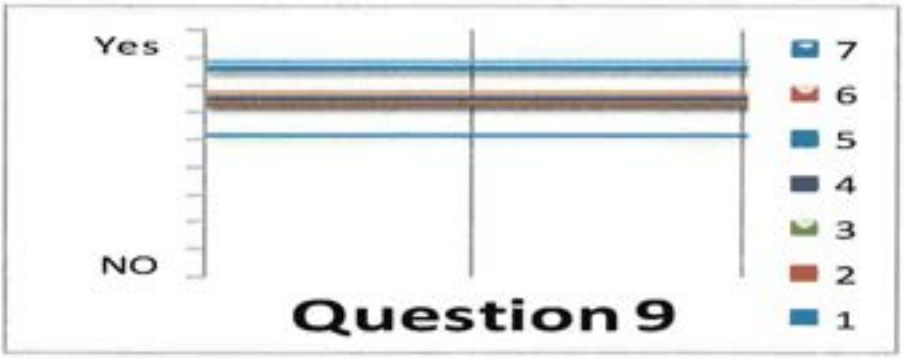
8. By watching the video, were you more inclined to want to try a new program than getting just the paper format?

NO 1 2 3 4 5 6 7 8 9 Yes

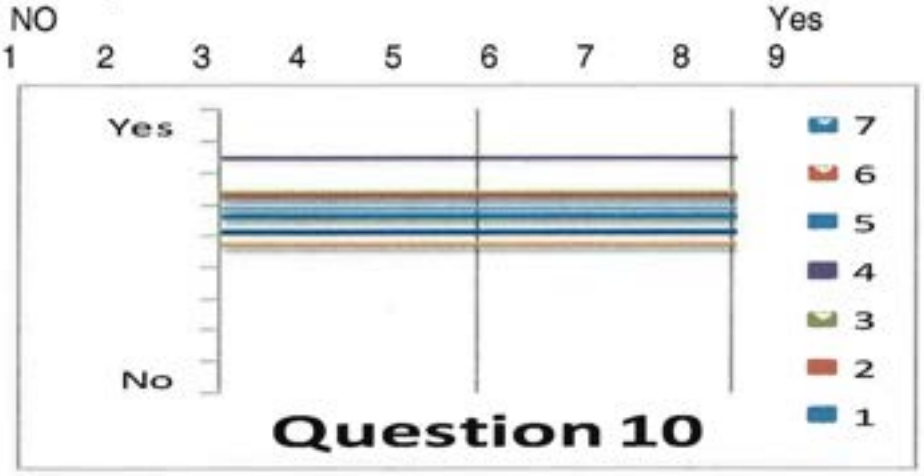


9. Did you find the video easy to use?

NO 1 2 3 4 5 6 7 8 9 Yes



10 Would you like the video to come with a set of text sub files?



Conclusion

The graphs from question one and two show that the participants found they got more information from the video instructions than the paper instructions. However, I believe that the time taken to read the paper instruction manual may have been shorter than the participants would have normally taken due to the testing environment. This result may have also come from showing the video instructions straight after the participants had read the paper manual.

All the participants showed they were more comfortable with the video instructions than the paper instructions in the graph for question three. There were allot of comments that they had already used YouTube type video which I think lead to them being more comfortable with the video concept. This was also backed up in question nine were all the participants found it easy to use the video instruction.

The graph from question four shows that most of the participants were more likely to use the program once they had seen the video instruction. This is also the case for

question eight, where participants were asked if they would be more likely to try a new program once they had watched the video instructions.

In Jeremy Vest rules of good video instruction, he suggests that the video should be between three and seven minutes. This theory is back up in question five, when all participants said they were happy with the length of the video. The video length for this case study was 5.37 minute long.

All the participants for question six and seven said they would like the video in segments because it allows them time to process and try what they have learnt. For example, a couple of participants said that they thought that the video instructions with segments were more like using a book, because they found they could go back to the articles they wanted to review with no hassle.

In question ten's graph all the participants showed that, they would still like to have the text file with the video. When questioned about this they said they felt safer knowing that the text was there if they needed it. However, when asked if they thought, they would use the text file, most of them said no.

In summary, from analysing this data we can establish that farmers prefer video instruction manuals to text manuals. It is also very important to stick to the rules of video design to allow participants to stay focused and engaged. I think the use of this technology would enable farmers to learn faster and feel more comfortable using new programs and products within the rural community.

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