

# **From information to instruction**

(thumbnail)

**Transforming paper-  
based material into  
online learning**

# Presented by...

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# What we'll cover

- Who we are
- Background information: the client, the project, the goals
- Underlying theory and models
- What we did and how we did it
- Examples

# Background information

# A bit about the project

- Client wanted to move courses online
- Objectives:
  - Provide a more meaningful learning experience
  - Use more interactive techniques
  - Increase accessibility of courses
  - Reduce amount of time to take courses
  - Reuse information effectively within and across courses

# Applying instructional theory

- Instructors and learners are separated in time and place
- Learning materials become the instructor
- Interaction takes place electronically
- Web can facilitate learning through:
  - More graphical environment
  - Less intimidating “presence”
  - Links to related topics/reference materials—  
immediate gratification!

## We based our design on...

- Differences in learners
- Learner expectations
- Existing content:
  - Courses are more knowledge-based than skill-based
  - Goals was to apply the knowledge at work

# Interactivity is critical

Online materials become the instructor

- Interactivity is more than clicking buttons
- Learners interact with content by:
  - Selecting topics, choosing a path
  - Performing activities, answering questions
  - Assessing how they're doing, getting feedback

# Topic structure

- Courses are chunked into units, lessons, topics
- Learners are pre-assessed and guided to topics—the “meat” of the lesson
- Topics consist of:
  - Introductory material (overview, objectives)
  - Learning content
  - Learning activity
  - Summary
  - Evaluation



# How we did it

IPCC October 2001

## Steps we took

- 1 Gathered initial prototype content
- 2 Organized initial prototype content
- 3 Further organized the prototype content
- 4 Finalized preparation of prototype content
- 5 Converted approved content to storyboard format
- 6 Completed storyboards
- 7 Converted storyboards to Web-based materials

# What the material looked like

Mastery levels

How RRSPs Perform as a Tax-shelter¶

Contributions to your RRSP, within the limits discussed later, are deductible from your current taxable income. This means that you do not pay tax now on that portion of your current income that you choose to invest in an RRSP. Instead you pay tax when you withdraw the funds from the RRSP, usually during retirement when your marginal tax rate is likely to be lower than your current marginal rate. Thus, you not only defer paying tax on the invested portion of your current income until your retirement, but you will also likely reduce your overall tax bill.¶MFS, GSL, LFP, CFP, LLQ¶

Furthermore, as long as the funds remain within your RRSP, the tax on any investment income that accumulates on those funds is also deferred until you withdraw it from your RRSP.¶MFS, GSL, LFP, CFP, LLQ¶

¶

Marjorie and Anna both received bonuses of \$5,000 from their employer, and they both decided to save the windfall for their retirement in 5 years time. They both have a current marginal tax rate of 43%, and expect to have a marginal tax rate of 27% during retirement.¶

¶

Marjorie decided to use the after-tax value of her bonus to purchase a GIC that paid 5%, and to hold the GIC outside of an RRSP. Each year she reinvested the after-tax value of her investment income at the same rate.¶

¶

Because the bonus was included in her taxable income, Marjorie had to pay tax of \$2,150, calculated as  $(43\% \times \$5,000)$ , leaving only \$2,850 to purchase the GIC. Her after-tax return on the GIC was 2.85%, calculated as  $((1 - 43\%) \times 5\%)$ . At the time of her retirement, Marjorie's investment amounted to \$3,279.94, calculated as  $((1 + 2.85\%)^5 \times \$2,850)$ . Because she has already paid taxes on the bonus and the accumulating interest, Marjorie can use the full amount of \$3,279.94 during retirement without paying any additional tax.¶

Outputs

# How we changed the material

Mastery  
levels

## How RRSPs perform as a tax shelter ¶

1 Within certain limits, contributions to an RRSP are deductible from your current taxable income. This means that you do not pay tax now on that portion of your current income that you choose to invest in an RRSP. Instead you pay tax when you withdraw the funds from the RRSP, usually during retirement when your marginal tax rate is likely to be lower than your current marginal rate. Thus, you not only defer paying tax on the invested portion of your current income until your retirement, but you will also likely reduce your overall tax bill. **MFS, GSL, LFP, CFP, LLQ ¶**

1 Furthermore, as long as the funds remain within your RRSP, the tax on any investment income that accumulates on those funds is also deferred until you withdraw it from your RRSP. **MFS, GSL, LFP, CFP, LLQ ¶**

2 Marjorie and Anna both received bonuses of \$5,000 from their employer, and they both decided to save the windfall for their retirement in 5 years time. They both have a current marginal tax rate of 43%, and expect to have a marginal tax rate of 27% during retirement. ¶

2 Marjorie decided to use the after-tax value of her bonus to purchase a GIC that paid 5%, and to hold the GIC outside of an RRSP. Each year she reinvested the after-tax value of her investment income at the same rate. ¶

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2 Anna decided to purchase the same GIC, but she held it within her RRSP. Because she was able to claim an offsetting tax deduction, she could invest the full \$5,000 in her RRSP. Her investment income of 5% per year also accumulated on a tax-sheltered basis, so by the time she retired after 5 years, the value of the investment in her RRSP was \$6,381.41, calculated as  $((1 + 5\%)^5 \times$

Outputs

# More changes

Generated →  
hierarchical  
TOC

|  |            |
|--|------------|
| <b>Registered Retirement Savings Plans</b> .....→                        | <b>11</b>  |
| What is an RRSP.....→  | 11         |
| Comparing RRSPs to other registered plans.....→                          | 11         |
| How RRSPs perform as a tax shelter.....→                                 | 21         |
| Who can contribute to an RRSP?.....→                                     | 31         |
| Eligible investments.....→   | 31         |
| Qualified Investments.....→  | 31         |
| Non-qualified investments.....→  | 61         |
| Contributions of property.....→  | 61         |
| <b>Types of RRSPs</b> .....→   | <b>71</b>  |
| Basic, Self-directed and Group RRSPs.....→                               | 71         |
| Basic RRSP.....→   | 81         |
| Self-directed RRSP.....→   | 81         |
| Group RRSP.....→   | 111        |
| <b>RRSP contributions</b> .....→   | <b>111</b> |
| Timing of contributions.....→  | 111        |
| RRSP contribution room.....→   | 111        |
| Earned income.....→  | 121        |
| Current contribution limits.....→  | 141        |
| Carry-forward of unused contribution room.....→                          | 171        |
| Carry-forward of tax deductions.....→                                    | 181        |
| Contribution limit statements issued by Revenue Canada.....→             | 191        |
| RRSP Overcontributions.....→   | 201        |
| Reduction of the \$3,000 limit in the February 1995 Federal Budget.....→ | 231        |
| Withdrawing excess contributions.....→                                   | 231        |
| <b>Pension Adjustments (PAs)</b> .....→                                  | <b>241</b> |
| Current service PAs.....→  | 241        |
| PAs for defined-benefit pension plans.....→                              | 251        |
| PA offset.....→  | 251        |
| Benefit entitlement.....→  | 261        |
| Conversion factor of 9.....→   | 261        |
| Indexation of savings.....→  | 271        |
| Loss of minimum RRSP room.....→  | 281        |

# Sample of table format

Mastery level

Output

Content

| Level# | Outcome#                        | Future# | Object#   |
|--------|---------------------------------|---------|---|
| 1      | MFS<br>GSL<br>LFP<br>CFP<br>LLQ |         | <b>Carry-forward-of-tax-deductions</b><br>In addition to being allowed to carry forward your unused RRSP contribution room, you can also carry forward your RRSP tax deduction for a current contribution to a future year. You might want to do this if you don't need the deduction this year, or if you expect to be in a higher marginal rate in a future year. Even if you don't claim the deduction this year, the funds invested in your RRSP continue to grow and are sheltered from tax. |
| 2      | LFP<br>CFP                      |         | Carrying forward tax deductions can be advantageous for taxpayers with available cash to contribute to an RRSP during the current taxation year but with little or no taxable income in that year or for someone who believes they will be in a higher tax bracket in a later year. <b>[this is marked as level 2 but says the same thing as the level 1 paragraph above]</b>   |
| 1      | MFS<br>GSL<br>LFP<br>CFP<br>LLQ |         | <b>Excess contributions</b><br>If you contribute more than your contribution room allows, you may have to pay a penalty tax of 1% per month on the excess amount, until you withdraw it.<br><br>Revenue Canada grants you a penalty-free lifetime allowance of \$2,000 (reduced from the \$8,000 offered some years ago).   |
| 1      | LFP<br>CFP<br>LLQ               |         | If you unintentionally make an excess contribution not covered by the allowance, you can apply to the Minister of Revenue to waive the penalty. You will have to:<br><br>- prove that the excess contribution was due to a reasonable error;  |

# Transformed content to instruction

Used various strategies:

- added narrative, instructor, guide
- inserted illustrations
- included exercises
- added examples
- showed calculations (developed “math style”)
- supplemented with explanations
- explained results
- drew conclusions

# Prepared for online delivery

- Created interactive activities and exercises
- Identified potential locations for links (internal and external), popups (glossary items and calculations), and other online elements
- Exploited the universe of resources available
- Tested the content for online usability

# Created the storyboard format

- Created a storyboard format
- Idea was to be able to put a lot of information in one place:
  - the structure (unit, lesson, topic)
  - screen (content, title, interaction)
  - layout (visuals, placement of text)
  - content

Screen info

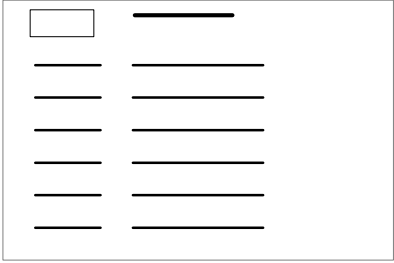

Unit,  
lesson,  
topic info

Layout  
and  
graphics

Content

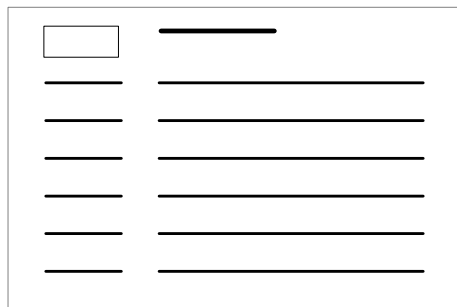
Mastery  
levels

Outputs

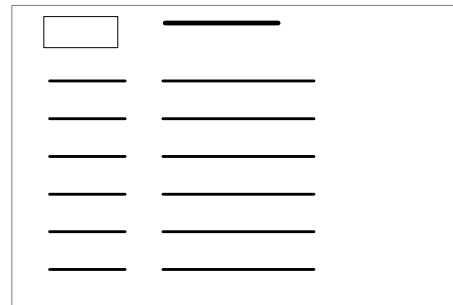
|                         |   |   |                         |   |
|-------------------------|---|---|-------------------------|---|
| <b>Unit</b>             | Retirement Savings  |   | <b>Screen Type</b>      | Content screen: Layout 2  |
| <b>Lesson</b>           | RRSPs   |   | <b>Screen No</b>        | 1. of 44  |
| <b>Topic</b>            | Introducing RRSPs   |   | <b>Graphic File (s)</b> |   |
| <b>Layout</b>           |  |   | <b>Graphic Sketch</b>   |  |
| <b>Notes</b>            |   |   |                         |   |
| <b>Level</b>            | <b>Output</b>   | <b>Learning content</b>   |                         |   |
| 1                       | MFS<br>GSL<br>LFP<br>CFP<br>LLQ<br>OPC  | <p><b>Why save for retirement?</b></p> <p>Most people need to save for retirement because their professional, business, or employment income stops—or drops significantly—when they retire. A retirement savings plan can help make sure you have enough money for your retirement. You can save in one of two ways:</p> <ul style="list-style-type: none"> <li>▪ in a registered savings plan</li> <li>▪ in a non-registered savings plan</li> </ul> |                         |   |
| <b>Additional Notes</b> |   |   |                         |   |

# Layouts

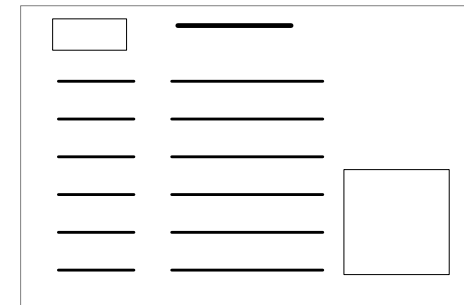
1: All text



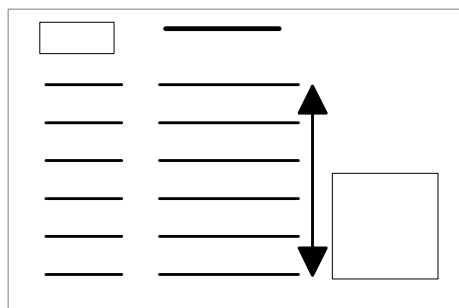
2: Graphic on right



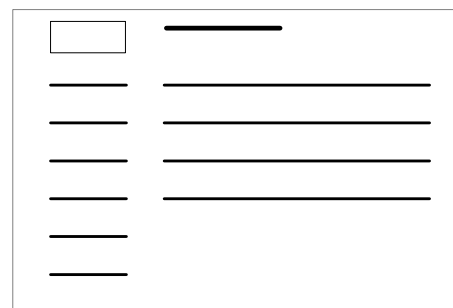
2a: Callout



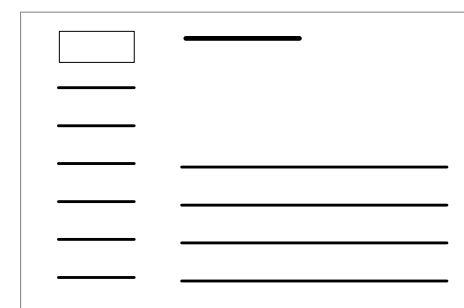
2b: Callout + scrolling



3: Graphic on bottom

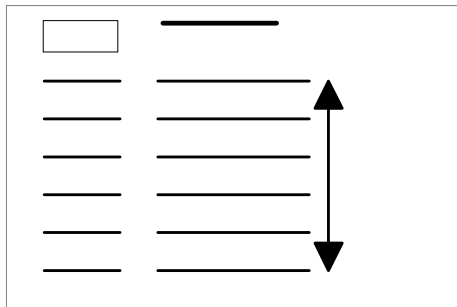


4: Graphic on top

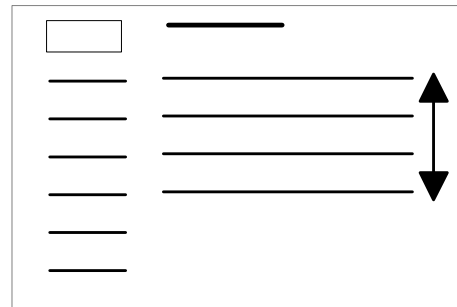


# More layouts

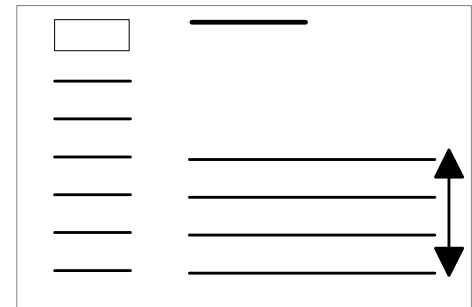
5: Graphics right +



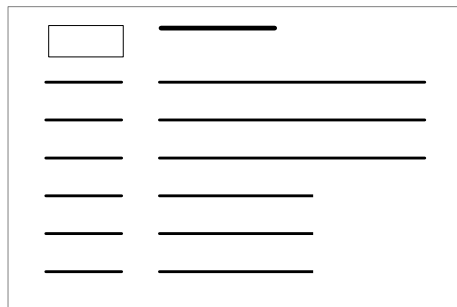
6: Graphics bottom +



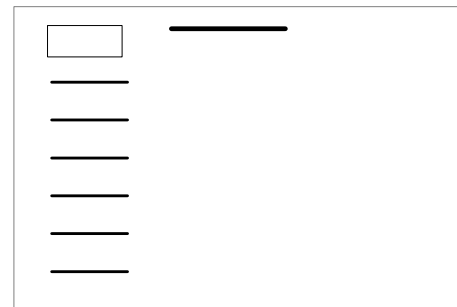
7: Graphics top +



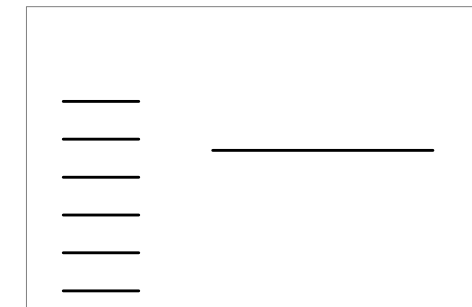
8: Embedded graphic



9: Interaction



10: Title



**To illustrate our points...**