The WatCV Research Study

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Katherine Lithgow
Joslin Goh
and the WatCV research team

University of Waterloo
29 November 2017
the WatCV research team

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- Simron Singh, School of Environment, Enterprise, and Development
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- Clare Bermingham, Writing Centre
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- Anne Fannon, Professional Development Program
- Angela Rook, GradVentures
- Svitlana Tarabon Gordon, Centre for Teaching Excellence
- Stephanie White, Centre for Teaching Excellence

Tomasson Goodwin, Lithgow and Goh, 29 November 2017
presentation outline

1 study overview
2 higher education context
3 WatCV intervention
4 study findings
5 sustainability
1.1 WatCV as research study

Research Question

Does integrating the WatCV assignment into existing course activities increase students’ ability to articulate the employability skills (i.e., professional, transferable skills) that they tacitly acquired while completing coursework?
1.2 WatCV as teaching and learning intervention

**undergraduate student learning outcomes**
identify, articulate, and persuasively demonstrate the implicit, transferable, employability skills that students develop in courses

**instructor enhanced teaching outcomes**
make explicit the transferable skills that students develop during course activities
assess these skills with the customized and interactive marking rubric
2.1 higher education context

employer demand for transferable skills (Drummond 2015)

“Only 1 in 5 employers - or 20% - believe that new graduates have the skills necessary to fill entry level positions in their companies.”

CareerBuilder.ca, 2015
2.1 higher ed research acknowledges

“Leaving employers to infer skills from content knowledge can lead to claims of a “skills gap” and of employers being unable to find graduates with the necessary skills to fill advertised positions.

Skills, Competencies and Credentials argues that this reflects ‘a failure on the part of universities to talk to students about the skill development inherent in their education.’”

Alan Harrison, HEQCO, 5 October 2017
2.3 University of Waterloo response

improve employability of all University of Waterloo students, regardless of discipline
focus on experiential education, including co-operative education (UW Strategic Plan 2013)
2.4 government call

Ontario government mandate to develop skills

*Highly Skilled Workforce Report*

(MAESD 2016; Chiose 2017)
2.5 student call

“It’s time we cast aside the skills-gap myth and instead address the skills awareness gap.

Until course syllabuses, CCRs, and ePortfolios include academic and extra-curricular learning outcomes and become part of a sector-wide policy that ensures a basic standard of taxonomies, positions, experiences and assessment practices, employers and students will not see value in them.”

Victoria Lewarne and Marc Gurissi, OUSA HEQCO, 24 October 2017
2.6 WatCV stakeholders

**Instructors** help students identify and articulate employability skills outlined in UDLEs.

**Students** need awareness and articulation practice.

**Employers** want to hear candidates articulate employability skills.

**Skills Articulation**
2.7 skills articulation movement

Internationally

- Deakin University (Australia)
- Griffith University (Australia)

Provincially

- Carleton University
- Guelph University
- McMaster University
2.8 Griffith University

Career development and EMPLOYABILITY curriculum FRAMEWORK

Transition In
- Clarifying sense of aspiration and connection to the field and future pathways.
- Conferring and commencing to build career direction.
- Selecting majors if relevant.
- Understanding employability and how to build it.
- Creating the career e-portfolio.

Transition Through
- Clarifying sense of purpose, capability and connection.
- Building positive and professional graduate identity.
- Capitalising on workplace learning.
- Building sense of employability.
- Building sense of professional connection.
- Positioning for graduate recruitment.
- Enriching the career e-portfolio.

Transition Out
- Preparing for graduate employment (or further study).
- Building sense of mastery.
- Building graduate/professional identity and personal brand.
- Building sense of professional community.
- Achieving graduate success.
- Leveraging the career e-portfolio with a growing portfolio of relevant experiences.

Transition Up
- Establishing graduate role.
- Consolidating professional identity.
- Building sense of proficiency, leadership, contribution, progression and resilience.
- Continuing to enhance the career e-portfolio.

Learning and assessment items designed to foster a sense of career direction, purpose and aspiration.
- Learning and assessment items designed to consolidate a sense of purpose and capability and foster a sense of employability and professional connection.
- Learning and assessment items designed to foster a sense of graduate identity, professional community membership, mastery and employability. (Well-targeted capstone courses are an ideal vehicle).

Raise awareness of possible career options leading from degree and how to increase employability.
- Facilitate workplace-based learning through methods such as: authentic assessment items; WIL, mentoring and industry visits.
- Active engagement with industry, consolidate preferred industry relationships and apply for graduate roles.
- Learning on the job, via workplace development structures (eg mentoring, CPD plans, etc), professional/industry association membership and professional leadership.

Lay foundations of career development plan.
- Commence building an e-portfolio, involvement in extracurricular activities, networks within the field and LinkedIn profile and contacts.
- Define career development plan and commence targeting opportunities.
- Actively engage with the professional field and extracurricular activities (eg. via Griffith Enrich).
- Commence active job search process.


Tomasson Goodwin, Lithgow, and Goh, 29 November 2017
Skills You Will Gain from this Degree

General/Transferable Skills:

- Academic writing and presentation skills
- Critical thinking and analytical skills
- Abstract reasoning
- Communication and interpersonal skills
- Leadership and teamwork skills
- Organization/time management skills
- Goal setting and prioritizing
- Knowledge of and experience with basic techniques of statistical analysis
- General research skills including database searching, conducting literature reviews, synthesizing and interpreting vast amounts of information, designing and conducting new research, data analysis, and interpreting and understanding both your own and other’s research results
2.10 University of Guelph

WHAT CAN I DO WITH MY Bachelor of Applied Arts in Media Studies Degree and Diploma in Media Communications?

Program Specific Skills
- Advocacy
- Analytical Reading
- Application of Communications Technologies
- Articulation of Ideas
- Audience Evaluation

Transferable Skills
- Adaptability
- Flexibility, Determination, and Enthusiasm
- Ability to Cope Under Pressure
- Thoroughness and Problem Solving Skills
- Ability to Think Strategically
- Written Communication
- Conceptualization
- Contextualization of Social Events
- Computer Proficiency
- Critical Evaluation
- Generation of Original Ideas
- Integration of Knowledge

Career Options (Some may require further education):
- Account Executive
- Advertising Photographer
- Advertising Sales Consultant
- Aerial Photographer
- Art Director
- Assistant Editor
- Associate Producer
- Associate Web Editor
- Event Photographer
- External Communications Officer
- Fashion Photographer
- Film or Television Writer/Producer/Director
- Film and Video Editor
- Fine Arts Photographer
- Food Photographer
2.11 employers want

<table>
<thead>
<tr>
<th>Personal Attributes</th>
<th>Presentational and Relational Skills</th>
<th>Metacognitive Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiative</td>
<td>Interpersonal skills</td>
<td>Critical thinking</td>
</tr>
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<td>Teamwork</td>
<td>Decision making</td>
</tr>
<tr>
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<td>Oral and written communication</td>
<td>Problem solving</td>
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</table>
2.12 institutions promise

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</table>
3.1 WatCV as teaching and learning intervention

- 6 faculties
- 22 courses
- 3398 student participants
- (1716 non-WatCV control + 1682 WatCV experimental)
- 2 experimental terms (Fall 2016 + Winter 2017)
- Standardized assignment instructions + in-class activities

- Standardized interactive rubric
- Marker workshops
- Marker post-mortem focus groups
- Marker post-survey
3.2 as learning intervention

standardized ePortfolio assignment

template highlights employability skills

used with permission
http://crodrigo3.wixsite.com/ca5rodri

Tomasson Goodwin and Lithgow, University of Waterloo, 29 November 2017
3.3 as eportfolio

competency reflection

750-word reflection on course-based skill

format expected in behaviour-based interview (BBI) contexts

(“STAR” - situation/task, action, result)

visual evidence of actions selected by student

3 iterations over 1 term

student example used with permission

http://crodrigo3.wixsite.com/ca5rodri

Tomasson Goodwin and Lithgow, University of Waterloo, 29 November 2017
3.4 student learning finding

student success increased significantly from WatCV1 to WatCV3

consensus:
if students follow the WatCV assignment instructions and rubric carefully, they achieve B-level grades
3.5 student response

https://vimeo.com/239876599/cb9af7fba0
3.6 as teaching intervention

employability skills made explicit and graded outlined in syllabus
tied to three course projects/activities graded as course assignment via eportfolio (6-30% of final grade)
### 3.7 as teaching and learning intervention

<table>
<thead>
<tr>
<th>Design Teaching</th>
<th>Iterative Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructor provides assignment, rationale, rubric</td>
<td>Student completes WatCV 1</td>
</tr>
<tr>
<td>Instructor provides feedback 1</td>
<td>Student incorporates feedback and completes</td>
</tr>
<tr>
<td></td>
<td>draft WatCV 2</td>
</tr>
<tr>
<td>Peers provide feedback 2</td>
<td>Student incorporates peer feedback and completes</td>
</tr>
<tr>
<td></td>
<td>Final WatCV 2</td>
</tr>
<tr>
<td>Instructor provides feedback 3</td>
<td>Students completes WatCV 3</td>
</tr>
<tr>
<td>Instructor provides feedback 4</td>
<td>Student uses WatCV to prepare for interviews</td>
</tr>
</tbody>
</table>
4.1 WatCV as research survey

6-month post course survey monkey

2 control (non-WatCV) groups (F2015 W2016)
2 experimental (WatCV) groups (F2016 W2017)

census-style (all students in eligible courses)
4.2 survey participation

Sent to 3998 students (1716 non-WatCV; 1682 WatCV)
31% accessed survey (1048)
77% completed close-ended questions (803)
43% completed open-ended questions (347)
4.3 coding method

Statistical data for close-ended questions: demographic and self-report statistics

Hand-coding, then statistical data for open-ended questions:
1881 hand-coded answers (627x3)
Coding guidelines from WatCV rubric
4.4 open-ended survey question coding

Open-ended questions: Behaviour-based interview question answered in the STAR (Situation or Task/Actions/Result) format

Achievement-level coding:  
**Sharpen**: can student identify (situation, skill, actions, results, new situation)  
**Deepen**: can student provide details (about situation, skill, actions, results, new situation)  
**Transfer**: can student connect details (about situation, skill, actions, results) to bridge to new/future situations
4.5 most significant findings

1. Writing WatCV reflections helps all students to articulate better (sharpen, deepen, and transfer).
2. Co-op students articulate better overall (WatCV and non-WatCV groups).
3. All students struggle to articulate how to transfer skills.
4. WatCV group co-op students articulate their ability to transfer skills better than non WatCV co-op students.
5. More non-WatCV group students answered with incorrect skill than WatCV group students.
4.6 completion of open-ended questions

<table>
<thead>
<tr>
<th>Control Group (non-WatCV)</th>
<th>Experimental Group (WatCV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>● None: 67%</td>
<td>● None: 66%</td>
</tr>
<tr>
<td>● 1 question: 18%</td>
<td>● 1 question: 3%</td>
</tr>
<tr>
<td>● 2 questions: 15%</td>
<td>● 2 questions: 31%</td>
</tr>
</tbody>
</table>

“This looks less like a survey and more like a test of my STAR skills. I am not quite prepared for this. I apologize.”
4.7 completion of open-ended questions

Co-op Students
- None: 58%
- 1 question: 14%
- 2 questions: 27%

Non co-op Students
- None: 60%
- 1 question: 14%
- 2 questions: 26%
4.8 can students sharpen?

**Sharpen**: can the student identify (situation, skill, actions, results, new situation)

<table>
<thead>
<tr>
<th>Control Group</th>
<th>71%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Group</td>
<td>84%</td>
</tr>
</tbody>
</table>
4.9 can they deepen?

**Deepen**: can the student provide details (about situation, skill, actions, results, new situation)

<table>
<thead>
<tr>
<th>Control Group</th>
<th>Experimental Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>54%</td>
<td>70%</td>
</tr>
</tbody>
</table>
4.10 can they transfer?

**Transfer:** can the student connect details (about situation, skill, actions, results) to bridge to new/ future situations

<table>
<thead>
<tr>
<th>Control Group</th>
<th>Experimental Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>50%</td>
<td>66%</td>
</tr>
</tbody>
</table>
4.11 how many co-op students answered these questions?

<table>
<thead>
<tr>
<th>Control Group</th>
<th>Experimental Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>86%</td>
<td>68%</td>
</tr>
</tbody>
</table>
4.13 oral communication

In the last 6 months, describe a situation where you successfully communicated, verbally, your opinion to others.

Describe the situation you were in.

Describe the action(s) you took to successfully communicate your opinion.

Describe the outcome of your action(s). How did the situation end? What did you accomplish? What did you learn?
4.13 oral communication: sharpen

Control Group  Experimental Group

69%  88%

In the last 6 months, describe a situation where you successfully communicated, verbally, your opinion to others.
4.14 oral communication: deepen

Control Group  52%

Experimental Group  81%
4.15 oral communication: transfer

Control Group: 47%
Experimental Group: 74%
4.16 WatCV as research study

Research Question

Does integrating the WatCV assignment into existing course activities increase students’ ability to articulate the employability skills (i.e. professional, transferable skills) that they tacitly acquired while completing coursework?
4.17 student response

https://vimeo.com/213877768
5.1 sustainability

CTE WatCV workshops
CTE Website
Campus network: Co-op, EDGE, SSO
5.2 potential applications

Program-level integration
Campus-level integration
Work term reflections
references


University of Waterloo (2013). *University of Waterloo Strategic Plan 2013: A Distinguished Past -- A Distinctive Future*. 
For discussion: WatCV as assessment innovation

<table>
<thead>
<tr>
<th>Student ID or WatIAM</th>
<th>Assignment No.</th>
<th>Course Name</th>
</tr>
</thead>
</table>

**WatCV RUBRIC**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>Completed: We received your application</td>
<td>-</td>
</tr>
<tr>
<td>C</td>
<td>Understandable: We glanced at your application</td>
<td>Correctly identifies all the elements of the ePortfolio: Headings, Captions, Labels</td>
</tr>
<tr>
<td>B</td>
<td>Professional: We read your application seriously</td>
<td>Writes all headings, captions, labels, and explanations to verbally communicate the professional purpose of the ePortfolio</td>
</tr>
<tr>
<td>A</td>
<td>Persuasive: We would like to interview you</td>
<td>Adapts layout to draw attention to and/or help explain the most important elements of the reflection (e.g., by manipulating font, colour, or by linking to further evidence)</td>
</tr>
<tr>
<td>A+</td>
<td>Memorable: We've put you on the short list</td>
<td>Adapts template to engage the viewer in the presentation of the professional skill</td>
</tr>
</tbody>
</table>

**ePORTFOLIO Formatting and Design**

<table>
<thead>
<tr>
<th>ePortfolio Formatting and Design</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>+4.0</td>
<td>Uses the template to submit all required elements of the ePortfolio</td>
</tr>
<tr>
<td>+3.0</td>
<td>Uses bold face text in every place required in the assignment</td>
</tr>
</tbody>
</table>
WatCV rubric structure

Grade ranges are associated with qualitative outcomes in the application setting (in our case, employer BBI context)

Vertical points in a column add up to highest numerical value in that grade range (at Waterloo, max D+ is 59%)

Horizontal points in a row add up to highest numerical value for that criterion
communicating achievements

at-a-glance macro- and micro-level feedback

Roberts-Smith, Lithgow, Tomasson Goodwin et al. IUPUI Indianapolis 23 October 2017.
**digital marking interface**

**centralized, interactive form**

### MY ACTIONS SECTION

<table>
<thead>
<tr>
<th>Action</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describes actions that all seem to address the situation or task</td>
<td>+12.0</td>
</tr>
<tr>
<td>Describes actions that were all taken independently by the writer</td>
<td>+12.0</td>
</tr>
<tr>
<td>Presents each action separated as a series of steps</td>
<td>+3.0</td>
</tr>
<tr>
<td>Gives enough detail to show that the actions all illustrate the professional behaviour</td>
<td>+3.5</td>
</tr>
<tr>
<td>Gives specific details that show how the writer went about taking one set of actions (e.g., I consulted my co-worker, Melanie, [action] by writing a short, polite email message that gave her the essential information problem, a direct ques and request response if afternoon [showing her]</td>
<td>+5.5</td>
</tr>
<tr>
<td>Describes professional behaviours that illustrate a creative or original approach</td>
<td>+2.0</td>
</tr>
</tbody>
</table>

**click-able buttons**

**32.5/40.5**

**export for electronic delivery to students**

**built-in grade calculator**

**validation of manually-entered student and course information**

**Student: J33rober I Assignment No. 1**

WE READ YOUR APPLICATION SERIOUSLY

**B**

75.75/100

The WatGV Research Project | 2017-10-18 3:03:53 PM

We can't find this student in the course this term. Please double check the values entered, and contact the office if needed.

Roberts-Smith, Lithgow, Tomasson Goodwin et al. IUPUI Indianapolis 23 October 2017.
WatCV marking rubric interrater reliability finding

Markers across disciplines agreed on grades for about 80% of the indicators in the rubric.

**Marker workshop process**
- Leaders review rubric design
- Participants grade sample assignment
- Participants compare grades
- All discuss points of difference
WatCV marker efficiency finding

how many assignments did you mark before you felt comfortable with marking WatCV?

you (instructors - 10 respondents)  your teaching assistants (6 respondents)