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Examining the Correlation between Sensory Modality Preferences and Reality-Based Simulations

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Examining the Correlation between Sensory Modality and Reality-Based Simulations

Dr. Eloy Nuñez, Associate Professor, Dept. of Public Safety Administration
Dr. Ernest Vendrell, Assistant Director, Dept. of Public Safety Administration
Professor Christine Sereni-Massinger, Esq.re
The Genesis of the Idea

Super Bowl XLI
Miami-Dade County, Florida
February 2007
EOD / Canine Workgroup

Co-Chairpersons
MDPD
FBI

US Dept. of Energy

FBI

ATF

Miami PD
Bomb Squad

Broward County SO
Bomb Squad

MDPD Canine Unit

Palm Beach SO
Bomb Squad

Fla Nat. Guard
44th Civil Support Team

MDPD Bomb Squad
Three Dimensional Approach to Critical Incident Management

3 Spheres
- Tactical
- Operational
- Strategic

3 Phases
- Before
- During
- After

Interdisciplinary A - Z

Three Dimensional Approach to Critical Incident Management: Interdisciplinary A - Z

3 Spheres
- Tactical
- Operational
- Strategic

3 Phases
- Before
- During
- After
Dealing with *Complexity*:
The Disciplines Within The Criminal Justice Field

- Law
- Homeland Security
- Criminal Investigations
- Public Administration
- Corrections & Rehabilitation
- Forensic Psychology
- Critical Incident Management
- Incident Stress Management
- Forensics
- Emergency Management
Background: The DRNC as an Overarching Theme

[Diagram showing various themes related to public policy, leadership, corrections management, criminal and civil law, financial management, forensic and crime scene investigations, information resource management, terrorism and homeland security, critical incident operations management, and human resource management.]

[Image of a Democratic Republican National Convention in Miami, Florida.]
Collaborative Course Design Process

Course Instructor

Instructional Design

DRNC SME
The overarching theme for this course is the Democratic-Republican National Committee (DRNC) Convention. The rationale for choosing the DRNC Convention as the overarching theme for courses of the Criminal Justice program is that such large-scale special events provide an ideal setting whereby most, if not all of the issues related to the criminal justice field can be played out. These large-scale special events are complex and involve virtually all the stakeholders and their issues associated with criminal justice. Planning and executing the DRNC Convention will lend a setting which will provide a realistic context that exposes students to a full range of criminal justice issues—in other words, “criminal justice A to Z.”

Continued...
CRJ-550 Legal Issues in Criminal Justice Administration

CRJ 551 Legal Issues in Criminal Justice Agencies

CRJ-552 Criminal Advocacy and Judicial Procedure

CRJ-570 Future Studies in Criminal Justice
CRJ-575 Contemporary Issues in CJ Administration

CRJ-522 Corrections Issues and Trends
CRJ 545  
Introduction to Forensic Science

CRJ 546  
Advanced Forensic Science

CRJ 547  
Forensic and Medicolegal Death Investigation

CRJ 548  
Crime Scene Investigation and Management

CRJ-584  Psychological Aspects of Critical Incidents
Warren defined the mission goals and rules of engagement, and then he let his field commanders make decisions on the spot when necessary. It was that kind of operational flexibility and trust in his mobile field force commanders that gave him confidence that all would turn out right in the end.
CRJ-581 Impact of Terrorism on Homeland Security
What REALLY Matters

• Connecting the simulation to prior learning within the course

• Facilitating student debriefing and reflection throughout the simulation

• Connecting to subsequent learning experiences
The Studies

ASSESSING THE EFFECTIVENESS OF REALITY-BASED FOCUSING EVENTS ACROSS THE CURRICULUM (2013)

EXAMINING THE CORRELATION BETWEEN SENSORY MODALITY AND REALITY-BASED SIMULATIONS (2014)
RQ₁: Will the overarching DRNC theme *increase learner interest* in the Criminal Justice curriculum?

**Percentages**

- More Interesting: 46%
- Equally Interesting: 46%
- Less Interesting: 8%

N=67
RQ2: Will the DRNC theme be perceived by learners (non-practitioners) and learner-practitioners to be relevant for careers in the criminal justice field?

Percentage of Non-Practitioners:
- Very Relevant: 65%
- Somewhat Relevant: 28%
- Not Relevant: 7%
N=40

Percentage of Learner-Practitioners:
- Very Relevant: 70%
- Somewhat Relevant: 20%
- Not Relevant: 10%
N=30
RQ3: Will the DRNC theme be perceived by learners (non-practitioners) and learner-practitioners as providing a realistic portrayal of what managers in the criminal justice field are faced with?

**Scenarios in their particular course were realistic.**

<table>
<thead>
<tr>
<th>Percentage of Non-Practitioners</th>
<th>Percentage of Learner Practitioners</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Very Realistic</strong></td>
<td><strong>Very Realistic</strong></td>
</tr>
<tr>
<td>25.60%</td>
<td>63.30%</td>
</tr>
<tr>
<td><strong>Somewhat Realistic</strong></td>
<td><strong>Somewhat Realistic</strong></td>
</tr>
<tr>
<td>64.10%</td>
<td>30%</td>
</tr>
<tr>
<td><strong>Not Realistic</strong></td>
<td><strong>Not Realistic</strong></td>
</tr>
<tr>
<td>10.30%</td>
<td>6.70%</td>
</tr>
</tbody>
</table>

N=40                                N=30
The Studies

ASSESSING THE EFFECTIVENESS OF REALITY-BASED FOCUSING EVENTS ACROSS THE CURRICULUM (2013)

EXAMINING THE CORRELATION BETWEEN SENSORY MODALITY AND REALITY-BASED SIMULATIONS (2014)
Theoretical Background

– Research has long shown that adults learn differently. (Goldstein & Blackman, 1978; Anderson and Adams, 1986; Knowles, 1990)

– One area of research hypothesizes that individuals have a personalized way of processing information. (Anderson and Adams, 1986)

– Research has identified student preference, specifically in terms of learning modality. (Kolb & Smith, 1985)
• The VARK learning preference is linked to sensory modality.
• It was created by New Zealand Educator, Neil Fleming in 1998.
• VARK is an acronym for:
  – Visual
  – Aural or Auditory
  – Read/Write
  – Kinesthetic
VISUAL LEARNERS

– prefer diagrams, flow charts and pictures.
– These learners also are categorized into another modality called Read/Write.
– These learners are often reliant on the written word and textbooks.
AURAL LEARNERS

– Gravitate to what is communicated to them.
– Tapes and conversation are beneficial to these learners.
– These learners remember what they hear.
KINESTHETIC LEARNERS

– thrive through hands on experience and tactile learning.
– These learners learn by doing.
– These learners prefer to see something done before doing it.
### Learning Modalities

<table>
<thead>
<tr>
<th>Designator</th>
<th>Predominant Sensory Preference</th>
<th>Secondary Sensory Preference</th>
<th>Name</th>
<th># of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>VM/am</td>
<td>Visual Modality</td>
<td>Auditory Modality</td>
<td>“See it, hear it”</td>
<td>2</td>
</tr>
<tr>
<td>VM/ktm</td>
<td>Visual Modality</td>
<td>Kinesthetic/Tactile Modality</td>
<td>“See it touch it”</td>
<td>19</td>
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<td>1</td>
</tr>
<tr>
<td>KTM/vm</td>
<td>Kinesthetic/Tactile Modality</td>
<td>Visual Modality</td>
<td>“Touch it, see it”</td>
<td>9</td>
</tr>
<tr>
<td>KTM/am</td>
<td>Kinesthetic/Tactile Modality</td>
<td>Auditory Modality</td>
<td>“Touch it, hear it”</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Total:</strong></td>
<td><strong>37</strong></td>
</tr>
</tbody>
</table>
Research Methodology

Sampling Frame

• 2014 Spring Term graduate students

• Enrolled in Criminal Justice courses that have implemented the DRNC focusing event theme (CRJ-530 and CRJ-565)

232 Surveys Administered

40 Returned 17.2%.
Research Methodology

The data collection instrument for this study was a 35 question survey administered directly to graduate-level students via SurveyMonkey.
Results – Descriptive Statistics

PERCENTAGE OF LEARNER-PRACTIONERS VS. NON-PRACTITIONERS

- Non-Practitioners, 57.5%
- Non-Supervisors, 25.0%
- Ranking Supervisors, 17.5%
Which statement best describes the reason for seeking a graduate degree in criminal justice?

- Post Retirement Opportunities, 30.0%
- Gain Employment in Criminal Justice Agency, 35.0%
- Gain Higher Rank or Better Position, 22.5%
- Improve General Knowledge, 12.5%
- Seeking Employment in Non-Criminal Justice Field, 0.0%
Breakdown by Criminal Justice Sub-Discipline

- Forensics: 13%
- Criminal Investigations: 18%
- Critical Incident Management: 10%
- Psychology: 8%
- Law: 8%
- Corrections & Rehabilitation: 5%
- Other: 5%
- Multiple Disciplines: 33%
- Homeland Security: 0%
Included the 30 question Brookhaven College Sensory Modality Preference Inventory

<table>
<thead>
<tr>
<th>Statement</th>
<th>Often</th>
<th>Sometimes</th>
<th>Seldom/Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>I remember information better if I write it down.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Looking at the person helps keep me focused.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I need a quiet place to get my work done.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When I take a test, I can see the textbook page in my head.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I need to write down directions, not just take them verbally.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Music or background noise distracts my attention from the task at hand.</td>
<td></td>
<td></td>
<td></td>
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### See it... Hear it... Touch it...

#### Learning Modalities

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**Total:** 37
Learning Modalities

- See It, Hear It: 6%
- See It, Touch It: 5%
- Hear It, See It: 5%
- Hear It, Touch It: 3%
- Touch It, See It: 24%
- Touch It, Hear It: 11%

N=37
Research Questions

RQ$_1$

Will the DRNC theme be perceived by learners as providing a realistic portrayal of what managers in the criminal justice field are faced with?
In regard to the overall DRNC theme in the Criminal Justice curriculum, which of the below statements most accurately describes your feeling?

- Very Realistic: 42%
- Somewhat Realistic: 47%
- Not Very Realistic: 11%
- Totally Unrealistic: 0%

The theme provides a ________ realistic portrayal of what managers in the criminal justice field are faced with.
Research Questions

RQ_2

Will the DRNC theme be perceived by learners to be *relevant* for careers in the criminal justice field?
In regard to the overall DRNC theme in the Criminal Justice curriculum, which of the below statements most accurately describes your feeling?

- Very Relevant: 22%
- Somewhat Relevant: 50%
- Not Very Relevant: 22%
- Totally Irrelevant: 6%

The theme is __________ relevant to my career (or intended career) in criminal justice.
Research Questions

RQ₃

Is there a correlation between sensory modality preference and receptiveness to reality based learning?
Conclusions

- The overarching theme and scenarios throughout the graduate Criminal Justice curriculum were perceived as being a **realistic** portrayal of real life challenges in the criminal justice field.
Conclusions

- The overarching theme and scenarios were perceived by students as being relevant to their post-academic career advancement.
Lessons Learned & Practical Applications

- Future design of online courses needs to take into consideration the predominance of visual-kinesthetic learners.
- Incorporate more interactive simulations (games) into the online platform.
Questions?