ONCAT Ontario Council on Articulation and Transfer

Charting a Shared Learning Space:
Competencies and Learning Outcomes as Markers for Transfer

April 20 from 1:30 - 2:30 PM

Jean Bridge, Brock University and Jeffrey Post, Niagara College

DIFFERENCE DRIVES TRANSFER

Students look to transfer because they want something **different** from their post secondary education

- Difference between the type of institution: Colleges and Universities

Learning through projects and practice or by context and concepts.

- Difference between programs
  - ✧ A different qualification
  - ✧ Progression from a diploma to a degree or a degree to a certificate
  - ✧ Different program in a different discipline, profession or trade
  - ✧ Different type of program– emphasizing different aspects of the discipline or even multiple disciplines

- Difference in the type of transfer pathways
  - ✧ Ad hoc determination of credit transfer
  - ✧ Articulation agreements between programs
  - ✧ Block transfer between pathways
- Different pathways offer greater benefit
  - ✧ To the student
  - ✧ To the institution
  - ✧ To the program

GEM GAME EDUCATION MATRIX

Promises a way to compare different -- yet potentially aligned -- programs that exist in a common disciplinary space

GEM GAME EDUCATION MATRIX

being carried out by the :

COLLEGE UNIVERSITY PATHWAYS FOR GAMES PROJECT

Funded by ONCAT

Purpose:

To design and prototype a tool that will enable colleges and universities to compare game-related programs by using commonly accepted competencies and learning outcomes to create new transfer agreements.

Partners in this project are:

Brock University, Durham College, Niagara College and UOIT

GEM addresses differentiation

- **Where institutions develop programs that address a unique approach to, or mix of, disciplines**

  Especially in programs where the discipline is broken down into a subset of disciplines

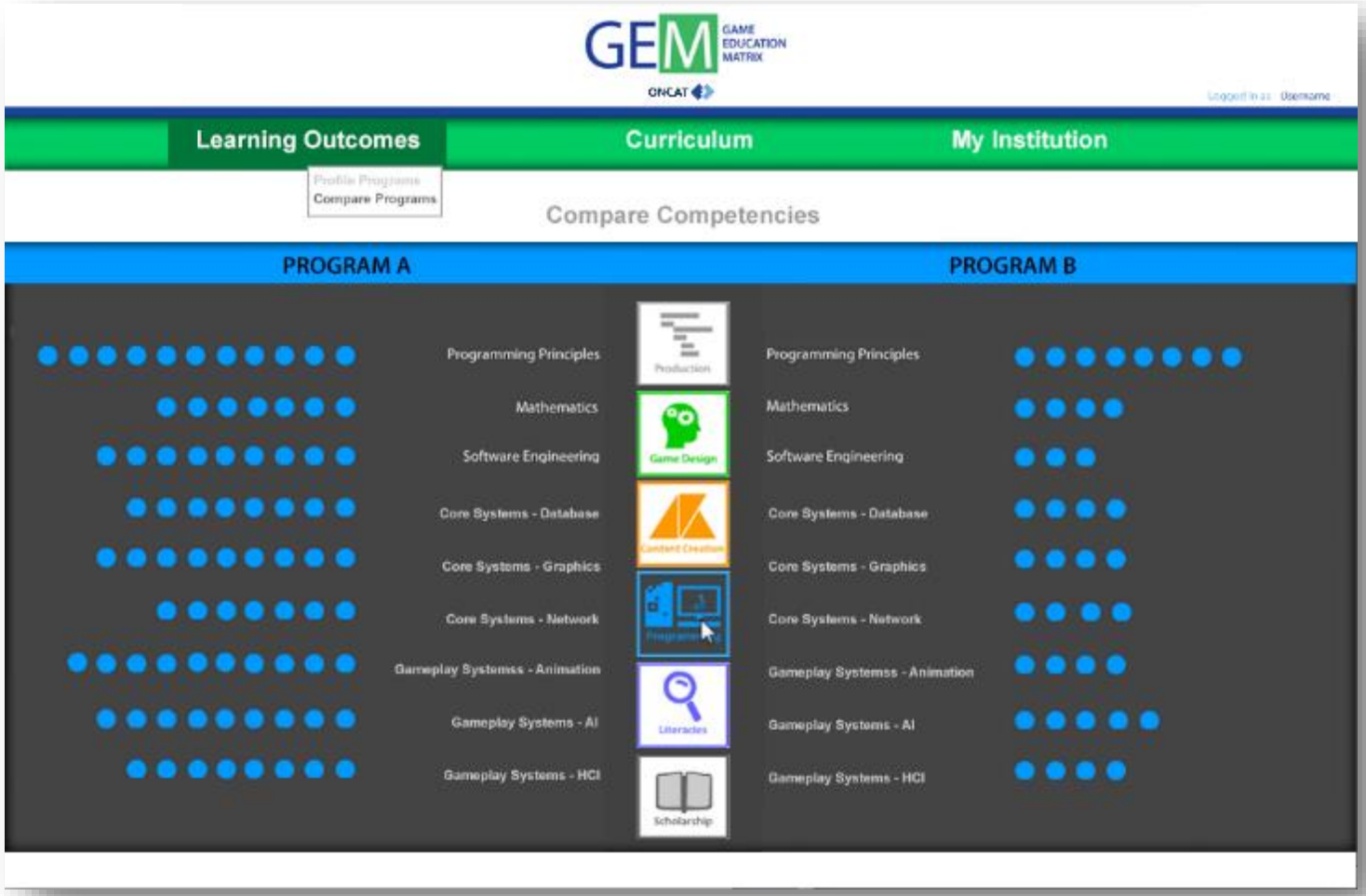
GEM addresses differentiation

- **Where the programs emphasize a particular mix of competencies**
  - ✧ subject areas it covers.
  - ✧ the breadth of learning in those areas
  - ✧ signature programs with acknowledged tradition of leadership

GEM addresses differentiation

- **Where programs produce different outcomes of learning in competencies and disciplines**
  - ✧ different knowledge, abilities and values
    - example: research and comparison of production tools vs testing a production tool in a project
  - ✧ different levels of depth in learning
    - example: identifying the components of a game vs comparing how distinct components effect a game.


GEM
GAME EDUCATION MATRIX
ON CAT
Logged in as Username
Learning Outcomes
Curriculum
My Institution
Profile Programs
Compare Programs
Compare Disciplines
PROGRAM A
PROGRAM B
Production
Game Design
Content Creation
Programming
Literacies
Scholarship


GEM
GAME EDUCATION MATRIX
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Learning Outcomes
Curriculum
My Institution
Profile Programs
Compare Programs
Compare Competencies
PROGRAM A
PROGRAM B
Programming Principles
Mathematics
Software Engineering
Core Systems - Database
Core Systems - Graphics
Core Systems - Network
Gameplay Systemss - Animation
Gameplay Systems - AI
Gameplay Systems - HCI
Production
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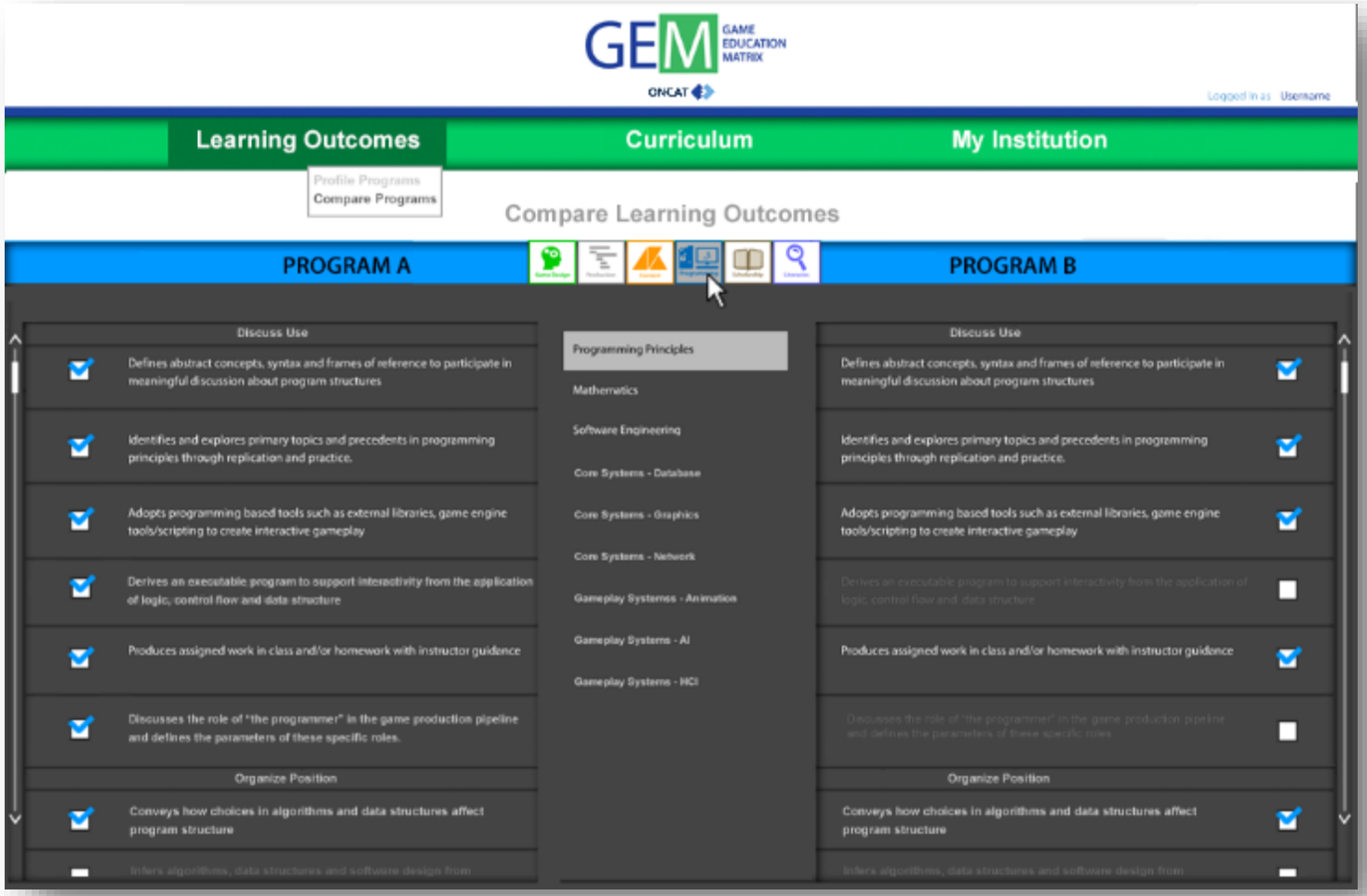
GEM
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Learning Outcomes
Curriculum
My Institution
Profile Programs
Compare Programs
Compare Learning Outcomes
PROGRAM A
PROGRAM B
Discuss Use
Defines abstract concepts, syntax and frames of reference to participate in meaningful discussion about program structures
Identifies and explores primary topics and precedents in programming principles through replication and practice.
Adopts programming based tools such as external libraries, game engine tools/scripting to create interactive gameplay
Derives an executable program to support interactivity from the application of logic, control flow and data structure
Produces assigned work in class and/or homework with instructor guidence
Discusses the role of "the programmer" in the game production pipeline and defines the parameters of these specific roles.
Organize Position
Conveys how choices in algorithms and data structures affect program structure
Infers algorithms, data structures and software design from
Programming Principles
Mathematics
Software Engineering
Core Systems - Database
Core Systems - Graphics
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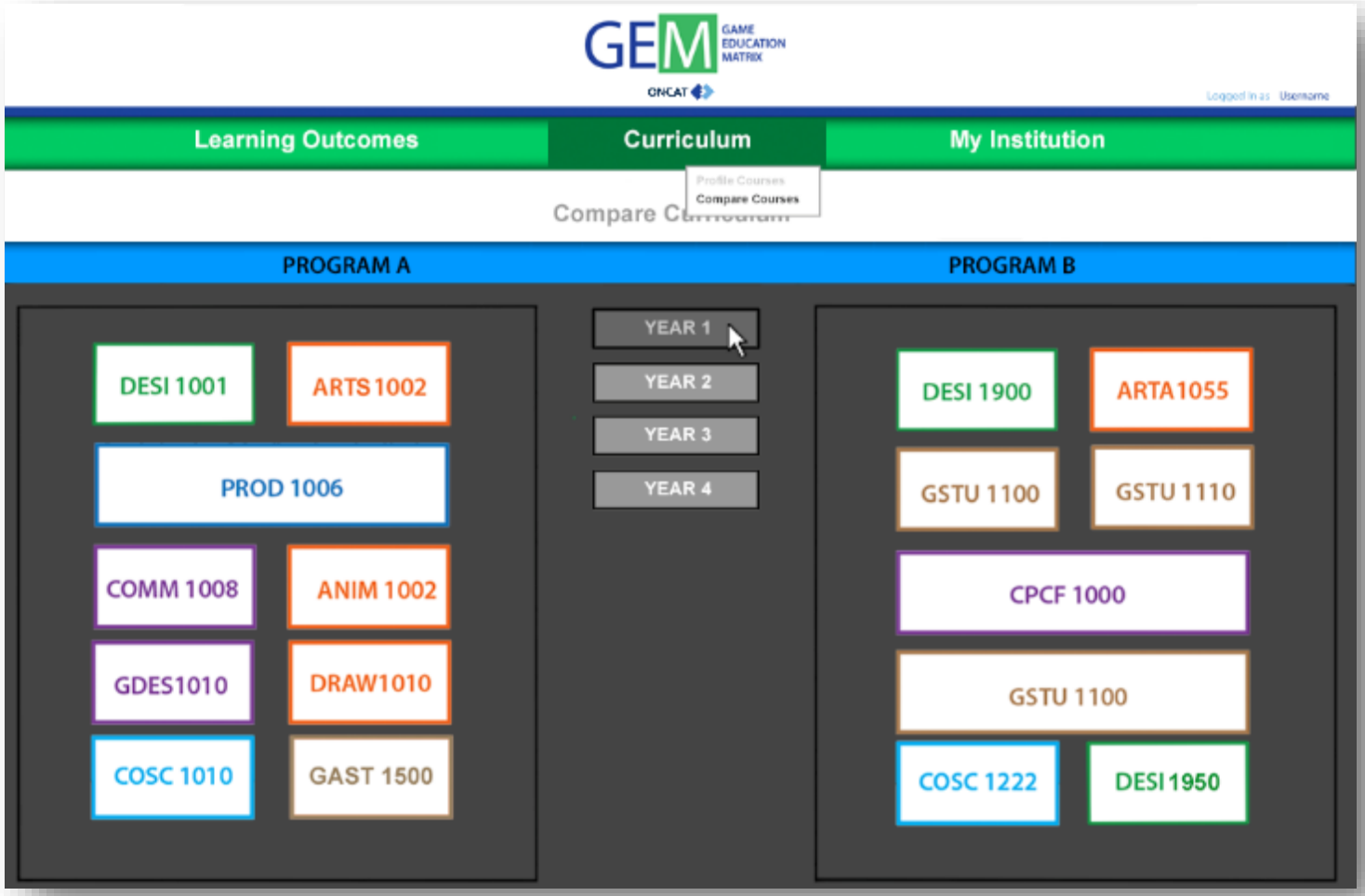
GEM
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ONCAT
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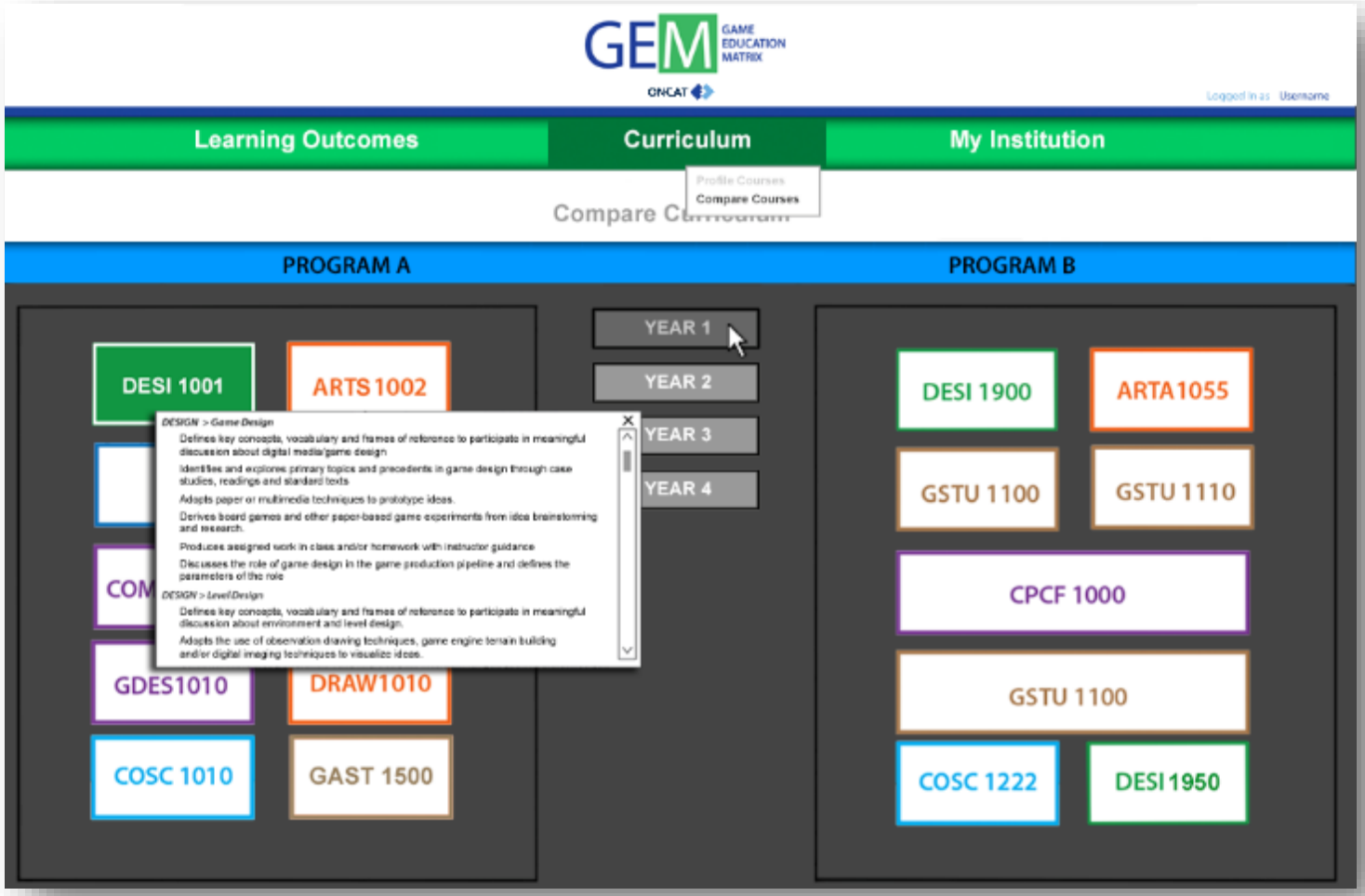
Learning Outcomes
Curriculum
My Institution
Profile Courses
Compare Courses
Compare Curriculum
PROGRAM A
PROGRAM B
YEAR 1
YEAR 2
YEAR 3
YEAR 4
DESI 1001
ARTS 1002
PROD 1006
COMM 1008
ANIM 1002
GDES1010
DRAW1010
COSC 1010
GAST 1500
DESI 1900
ARTA1055
GSTU 1100
GSTU 1110
CPCF 1000
GSTU 1100
COSC 1222
DESI 1950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Compare Curriculum
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PROGRAM B
YEAR 1
YEAR 2
YEAR 3
YEAR 4
DESI 1001
ARTS 1002
COM
GDES1010
DRAW1010
COSC 1010
GAST 1500
DESIGN > Game Design
Defines key concepts, vocabulary and frames of reference to participate in meaningful discussion about digital media/game design
Identifies and explores primary topics and precedents in game design through case studies, readings and standard texts
Adopts paper or multimedia techniques to prototype ideas.
Derives board games and other paper-based game experiments from idea brainstorming and research.
Produces assigned work in class and/or homework with instructor guidance
Discusses the role of game design in the game production pipeline and defines the parameters of the role
DESIGN > Level Design
Defines key concepts, vocabulary and frames of reference to participate in meaningful discussion about environment and level design.
Adopts the use of observation drawing techniques, game engine terrain building and/or digital imaging techniques to visualize ideas.
DESI 1900
ARTA 1055
GSTU 1100
GSTU 1110
CPCF 1000
GSTU 1100
COSC 1222
DESI 1950

GEM charts curricular emphasis

- Range of breadth at the competency level
- Depth of learning at the learning outcomes level
- The mix of of these defines a program’s emphasis
- This information can be mapped to specific courses

GEM identifies program specialization

- At the discipline and competency levels

  The mix of which produce a unique program profile

- At the LO level

  Students demonstrate a unique set of knowledge, abilities and values

GEM acknowledges signature pedagogies

- At the program level capstone outcomes are identified
- At the learning outcomes level where teaching and learning models vary and with such things a formative and summative projects and portfolios

GEM considers conditions of learning

- At the program level by capturing information about faculty
- At the LO level where programs vary in their stress on such things as supervision, collaboration, personal responsibility, problem-solving, independent inquiry, risk and even relationship to industry

GEM captures and uses these aspects of difference to help institutions develop transfer pathways

They can use learning outcomes

- In diverse programs
- that stress different competencies and
- offer distinct courses

to compare like with like

THERE IS ALWAYS A TENSION BETWEEN DIFFERENCE AND SAMENESS

in the process of developing transfer pathways

While the gem tool highlights the differences between programs it does this through agreement about what students know, be and do at the end of a program

- Shared understandings and language

GEM is built upon common understandings

- Provincial policy framework that one could say obscure difference – and encourage standardized approaches
  - ✧ Qualifications
  - ✧ Program Standards and Undergraduate Degree Level Expectations
  - ✧ Quality assurance processes

GEM is built upon common understandings

- Agreement amongst educators and others about:

  what the discipline comprises, its boundaries and what competencies can be sought

  This is essentially **Tuning** – a faculty-driven process of defining disciplines pioneered by the Bologna accord and now used widely in the US and Canada.

GEM is built upon common understandings

- Agreement amongst educators and others about:

  what the full range of possible student learning outcomes are within those competencies

GAME EDUCATION DISCIPLINES AND COMPETENCIES

DESIGN

- Game Design
- Experiences Design
- Character Design
- Level Design
- Human Factors/User-Centred Design
- Narrative/Storytelling
- Game Play Mechanics
- User Interface

PRODUCTION

- Documentation
- Production Process
- Production Tools
- Prototyping
- Production Management
- Organizational Behaviour
- Quality Assurance

CONTENT

- Drawing
- 3D Modeling
- Animation
- Texturing
- Cinematics
- Sound
- User Interface
- Art Direction

PROGRAMMING

- Programming Principles
- Math
- Software Engineering
- Core Systems
  - Database
  - Graphics
  - Physics
  - Network
- Gameplay Systems
  - Animation
  - Artificial Intelligence
  - Human Computer Interaction

PROGRAMMING

- History
- Social Contexts & Discourse
- Platforms & Genres
- Rhetoric
- Theory (play, narrative, immersion, interaction)
- Criticism
- Industry/Business

LITERACIES

- Art General
- 2D Design
- Basic Media Production/Imaging
- Communications
- Creative process
- Narrative
- Literature
- Research
- Ethics
- Writing
- Business

GEM is built upon common understandings

Agreement amongst educators and others about:

how a specific discipline expresses learning at progressively more advanced levels

e.g. a taxonomy that lays out a set of categories and descriptors that resonate with the discipline

GAME EDUCATION MATRIX TAXONOMY

DISCUSS/ USE CORE CONCEPTS

DEFINE, OBSERVE, IDENTIFY, ACQUIRE, REPLICATE, ADOPT, EXPLAIN, DERIVE, RESPOND, REFER, VERIFY, DEMONSTRATE, EXPLORE, PEFORM, PRACTICE, PRODUCE

vocabulary	principles/ concepts/ conventions	process /tools/ techniques	performance/ deliverables	direction supervision	roles
learning outcome statement	learning outcome statement	learning outcome statement	learning outcome statement	learning outcome statement	learning outcome statement

ORGANIZE/ POSITION WITHIN CONVENTIONS

UNDERSTAND, EMULATE, APPLY, CONVEY, ADAPT, STRUCTURE, COMPUTE, PROGRAM, CALCULATE, MANIPULATE, DIFFERENTIATE, CATEGORIZE, COMPARE, MATCH, CONNECT, PLACE, CONTEXTUALIZE, CITE, PURSUE, BUILD, TEST, PROTOTYPE, TARGET, CONTRIBUTE, ALIGN

knowledge	inferences	relationships/ relevance/ context	performances/ deliverables	instructional guidance	personal responsibility
learning outcome statement	learning outcome statement	learning outcome statement	learning outcome statement	learning outcome statement	learning outcome statement

MOBILIZE/ CREATE WITHIN COMPLEX RELATIONS

FORMULATE, DEVELOP, RELATE, LEVERAGE, COMBINE, REVIEW, REFLECT, ASSESS, REFINE, CLARIFY, ITERATE, BALANCE, OPTIMIZE, CORRECT, SOLVE , PLAN, SELECT, DOCUMENT, IMPLEMENT, ESTABLISH, COLLABORATE, CRITIQUE, TRANSFER, COORDINATE, NEGOTIATE

conception/ diagnosis	methods/iteration/ solutions	feedback/criticism	performances /deliverables	latitude/specialization	respect/ teamwork
learning outcome statement	learning outcome statement	learning outcome statement	learning outcome statement	learning outcome statement	learning outcome statement

ORIGINATE/ JUDGE TOWARD INNOVATION

ABSTRACT, HYPOTHESIZE, PROPOSE, GENERATE, INVENT, DEVISE, REFLECT, REVISE, LEGITIMIZE, DEFEND, INITIATE, EXHIBIT, SUSTAIN, ADVANCE, EXTEND, EXPAND, EVALUATE, SYSTEMATIZE, MANAGE, CONSULT, DIRECT, LEAD

insight/innovation/ excellence	systematic/sustained	critical/reflexive	originality/ distinctiveness	performance/ deliverables	autonomy/ professional standards
learning outcome statement	learning outcome statement	learning outcome statement	learning outcome statement	learning outcome statement	learning outcome statement

GEM is built upon common understandings

Agreement amongst educators and others about:

how a specific discipline expresses learning at progressively more advanced levels

All developed through consultation, detailed interviews with faculty and verification of the results through survey of nearly 30 educators in the field

YET

This entire consultative process distills the nuanced and sometimes contradictory perspectives of individuals into a manageable framework that is the GEM tool.

On the side of difference
the GEM framework provides many ways to picture difference – to present an honest view of a program's special characteristics

On the side of standardization
the GEM framework - the very idea of a matrix – suggests limitations and reduces the diversity of voices and language down to those upon which we can agree

The GEM tool may even drive the system toward sameness if programs revise themselves to accommodate transfer!

The traditional approach to credit transfer is course-for-course assignment of credit

- equivalency or readily compared sameness between courses
- This is rarely achievable because courses aim at different learning outcomes, cover different material in different ways

The traditional approach to credit transfer is course-for-course assignment of credit

GEM gets us to shift the focus just enough to stop thinking about course-to-course transfer

- To consider and compare outcomes
- Then when we shift back to courses and their possible equivalency
- GEM provides detailed information about learning outcomes achieved in courses

Guides a new conversation about the way we assign transfer credit

What can we learn by applying competencies and learning outcomes to transfer?

- Can GEM help us assess the quality of articulation agreements/pathways?
- Can GEM be applied to other disciplines?
- Can the GEM help bring the right people and perspectives to the table when institutions negotiate transfer agreements?