



The Use of Continuous Assessment and Feedback; and it's Application to the Extended Essay Process

Presenter: Kerry Bullock

Queensland Academy for Science Mathematics and Technology

Brisbane, Australia



3 Queensland Academies & their University Partners

Science, Mathematics and Technology :
University of Queensland



Creative Industries:
Queensland University of Technology



Health Sciences: Griffith University



Queensland Academy for Science, Mathematics and Technology

Foundation Year 2006

Staff: 36

Yr 10, Yr 11, Yr 12

Graduating Students in 2008: 82

Unique Environment at QASMT

Selective Government Funded School

All students study IB Diploma Course

All students study 2 subjects from Group 4



IB Learner Profile

- **Inquirers:** They acquire skills necessary to conduct inquiry and research and show independence in learning.
- **Thinkers:** They exercise initiative in applying thinking skills.
- **Reflective:** They give thoughtful consideration to their own learning and experience. They are able to assess and understand their strengths and limitations in order to support their learning.

"The mind is not a vessel to be filled but a fire to be ignited"

-Plutarch

How can the EE Process Reflect the IB Learner Profile?

- The world average number of points for EE & TOK is 1 point
- Success in EE can not simply be measured as outcomes based
- How do we judge a student's success in their EE journey?
- How do we best assist them to be **Inquirers, Thinkers** and **Reflective**?
- How do we help them to see the value in this research project?



Inquiry Based Learning

- **Constructivism - The theory that:**

"humans generate knowledge and meaning from their experiences"
Jean Piaget
1967

"...humans can understand only what they have themselves constructed"

"Learning is a result of individual mental construction, whereby the learner learns by matching new against given information and establishing meaningful connections"

"...learning is inescapably affected by the context and the beliefs and attitudes of the learner"
Giambattista Vico

Constructivism

- *"The sustaining motivation to learn is strongly dependent on the learner's confidence in his or her potential for learning. These feelings of competence and belief in potential to solve new problems, are derived from first-hand experience of mastery of problems in the past and are much more powerful than any external acknowledgment and motivation."*

-Prawat and Floden



How does the EE Support Inquiry Based Learning?

- Finding their own solutions to the questions that engage them
- Finding a purpose to their learning, beyond what their predicted grade will be
- This gives them the freedom to ask the questions that really interest them.

One Physics student used his love of rugby as a stimulus to assess what the optimal pressure of a football would be to gain the greatest distance travelled.



How Can They See the Benefits?

"The responsibility for learning should reside increasingly with the learner"

-Von Glasserfield

The Extended Essay process provides a wonderful opportunity for students to self reflect:

- What have I learnt?
- How can I improve?
- How can I use these skills in future studies?



Why Does the EE Matter?

Another example of this type of Constructivist view, where knowledge has personal meaning, applies to those students who have used the EE as a means for better understanding the challenges that affect them or someone close to them.

One student based his research on the effect of touch therapy in autism, as means of better connecting with his younger brother.

Blooms Revised Taxonomy

Creating

Generating new ideas, products, or ways of viewing things
Appraising, defending, critiquing, interpreting, justifying, supporting

Evaluating

Justifying a decision or course of action
Checking, hypothesising, experimenting, constructing, formulating

Analysing

Breaking information into parts to explore understandings and relationships.
Comparing, organising, deconstructing, interrogating, finding.

Applying

Using information in another familiar situation.
Implementing, carrying out, using, executing.

Understanding

Explaining ideas or concepts.
Interpreting, summarising, paraphrasing, classifying, explaining.

Remembering

Recalling information.
Recognising, listing, describing, retrieving, naming, finding.

Blooms Taxonomy and the EE

*“ High level research and writing skills, intellectual discovery and creativity”
IBO 2007*



Create

Analyse

Evaluate

What Role do Supervisor's Play in this Higher Order Thinking Process?

- The best advice that you can give your students is to choose an EE topic that 'lights their fire.'
- It is our role to create an environment where they can have the confidence to be intellectual risk takers.
- The lessons learnt are in the journey and not in the destination. A minimum of 40 hours is a long time to spend on activity that does not engage you.



Past Examiner's Reports

- Examiner's reports often state the same topics and research questions appear year after year.
- Is this because the supervisor is confident in this area of research and they do not want to step out of their comfort zone?
- Create a pedagogy of practice where students shape their own research and outcomes.

The Role of the EE Co-ordinator



- Facilitate this process
- Monitor student work and track progress
- Support staff and students
- Teach key areas of research, organisation, time management, academic honesty, referencing and essay writing

QASMT and it's Unique Challenges

- First cohort of 82 students
- All must be supervised for Extended Essay
- This year's Yr 10 cohort of 187 students means that we must centralise the EE process, so that each student is given the opportunity to succeed and learn through experience
- In our first year, only one of our staff had previously supervised a student for EE; we were all learning together.

How does QASMT manage the EE Process?

- Centralise the program so that all students have access to expertise
- Promote EE as a vehicle for self directed learning
- Facilitate student self evaluation and reflection
- Promote partnerships beyond the student/ supervisor role

The EE Program

- We draw on individual strengths- Directory of skills offered.
- Professional Development- moderation program for cross curriculum marking, past examiners reports similarities across subjects.
- The E-Learning Environment - Student progress is monitored here. Students participate in Wikis and Discussion Forums.

The E-Learning Environment

- Used to monitor student progress
- EE coordinator and supervisor can track student progress at each stage
- Parents also have access to student progress
- Students can mentor each other using Wikis and Discussion forums
- Developing the E-Learning environment across 3 schools
- Useful for students who are the only students completing an EE in a subject discipline
- Study skills sessions- an online learning program



The HUB Program

- Weekly session which focuses on TOK, EE, CAS as well as relevant year group information
- Subject presentations
- Past students discuss their EE journey
- Time Management/ Stress Management sessions
- Parent information sessions



The External Tutor Program

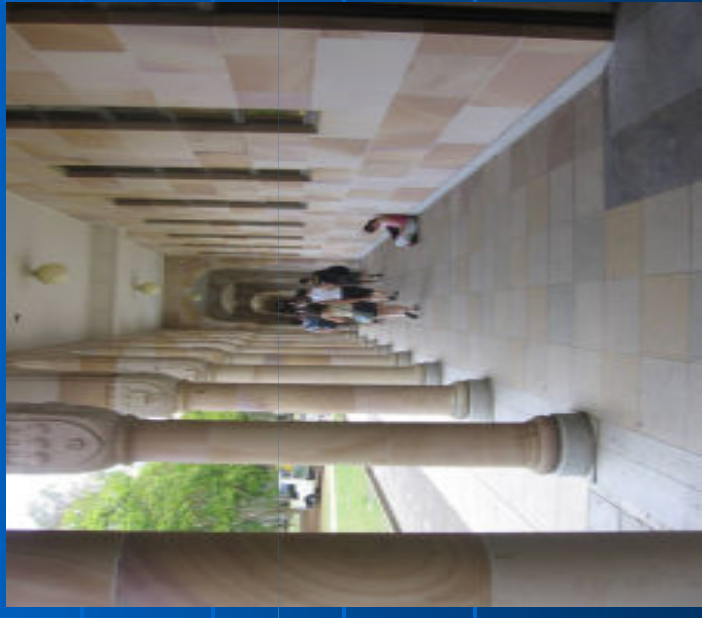
**Final Year Queensland
University
Education Students**



- Students have access to an External Tutor to mentor them in the research phase of the project
- Discussion forums- E-Learning Environment
- University students spend a week visiting classes and return to give mentoring sessions
- Creates a network to give a level of assistance to students that extends beyond the level of the expertise of supervisors

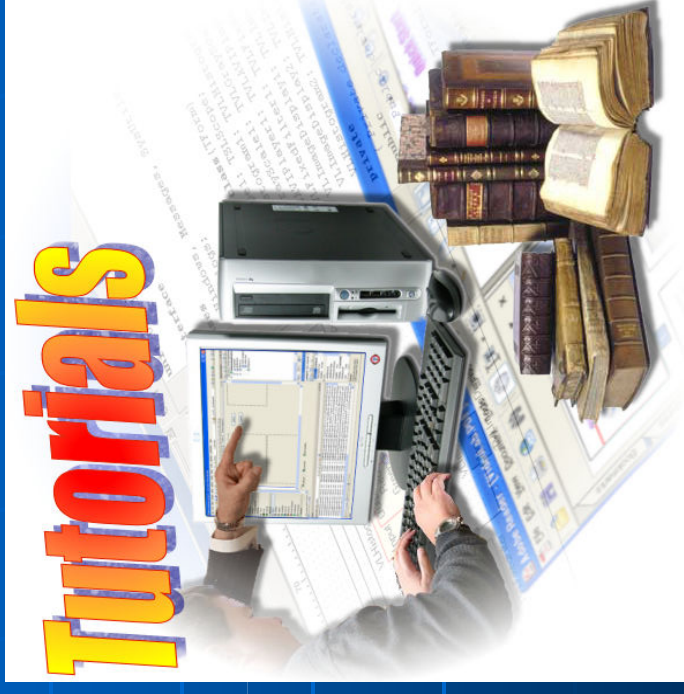
University Partnerships

- Purpose: To create a fluid movement from Academy to University campus
- Use of University libraries
- Visits to labs: Engineering and Biomedical Science faculties to look at placing research within context
- Discussion forums- students will have a period of time allotted where they can participate in discussion forums with University staff
- Industry visits - research leaders invited to speak to students. This gives the students' inquiry based learning experience a contextual meaning
- University of Queensland Cyber-school



The Extended Essay Tutorial Program

- Weekly tutorial
- Handbook
- Importance of deadlines
- Mind mapping
- Hierarchical development of discussion points
- Referencing
- Academic Honesty
- Research tips



The Supervisor Mentoring Program

- Science, Maths – Essay writing Professional development
- Group 4 supervisors matched with Group 1
- New staff mentored by more experienced staff
- Contact with other two Academies to ensure that all teachers can access help
- Time set aside on student free days for moderating essays and staff in-service of Extended Essay

The Sharing of Good Teaching Practise

- PD opportunities- optional EE sessions for staff development
- Compulsory moderation of essays in order to improve predicted grade accuracy
- UQ PHD students to give in-service to staff and students on the research process
- Library research lecture
- Turnitin PD sessions
- Referencing- PD sessions
- Staff Yellow page directory

The Extended Essay

Development Days

- **3 day program in last week of school for Yr 11 (6 months into their 12 month EE journey)**
 - **2 days spent researching at the University libraries. EE external tutors available to help locate research.**
- **Science students were allocated time on these days to complete all EE practical work**
- **1 day set aside for guest lecturers:**
 - **PHD students: research process, refining work, the EE's relevance for Tertiary studies**
 - **Counsellor- good study habits, time management**
 - **EE co-ordinator - mind mapping, hierarchical development of points, essay construction**

Monitoring the Student's Progress

- Formally:
 - Academic Review
 - Progress Forms
 - End of term progress grade

- Informally:
 - Instep Mentor
 - EE coordinator
 - Supervisor
 - Peer evaluation



Monitoring the Student's Progress

- Academic Review
- Formal evaluation
- Contract
- Log sheets
- EE interview
- EE Development days
- Working outline
- Self Evaluation Forms
- Written Feedback
- Final checklist



Extended Essay Forms

- Contract
- Log sheets- At least 3 must be filed
- EE Evaluation Interview
- Working Outline
- Self Evaluation Form
- Final Draft
- Final Checklist



Self Evaluation

- Concluding interview
- Reflection as preparation for Concluding Interview
- Self evaluation form
- Students and supervisor jointly allocate a progress grade for their end of term reports of satisfactory/unsatisfactory
- 100% success in submission of work



Self Evaluation Form

Extract- The RQ section

Research Question	Checklist: Tick the appropriate box				Planning Notes
	Y	N	Unsure		
Is my Research Question stated clearly in the Introduction?					
Is my RQ clearly stated in the abstract?					
Is my RQ still too broad and needs refining further?					
Is my RQ clearly phrased and sharply focused?					
Can my RQ be effectively treated within the word limit?					
Does it fall within my subject area, and not some other subject area?					
Does it lend itself to the use of the concepts, methods and theories in my subject area?					
Is it very clear that my discussion topics clearly support interpretation of my RQ?					

How does this program fit with the changes to the EE Syllabus?

2009 Syllabus

- No subject specific criteria, previously worth 1/3 of total marks
- Emphasis is now placed on analytical, evaluative skills, reasoned argument and the process of investigation



EE in Review

Student success in Extended Essay should be measured in:

- The higher order thinking skills that have developed
- The development of resilience and coping skills
- Time Management and organisational skills
- Learning to critically evaluate both progress made and the quality of work
- Learning to value the concept of refining work
- An understanding of where these skills will take them



Where to from Here?

- IB Learner profile
- We need to imbed this in all aspects of teaching pedagogy
- Full school review of EE process
- Past students to give staff feedback on aspects for improvement
- Further develop the E-Learning environment to facilitate interschool student mentoring
- EE must involve the whole school community
- All staff will play a role as supervisors
- Links created with both industry and University partners to inspire students to be risk takers

Student Reflections

"I think that working on the Extended Essay is one of the most rewarding aspects of the IB. The entire process, from choosing a topic, designing an experiment, to researching and writing the essay, was a completely invaluable experience."

Dilshad



"None of us realised the magnitude of the task ahead - and just how important it is to pick a topic that inspires you"

Ashley

Student Reflections

"I found that the direction I envisioned myself taking with my Extended Essay was not the direction I ended up taking - my research took me onto a new path, one that turned out to be much more appropriate for the scope of my essay."

Joanna

"Extended Essay has been quite a challenge - I think it has been for everyone. It's not just the length though; it was all of the background information, the planning, the meetings and HUB sessions that really did consume the time, but really did help."

Paul

Queensland Academy for Science, Mathematics and Technology Brisbane, Australia

