

**Teacher Jury Report No 5
Mathematics and Mathematics: Specialist Jury Outcomes
on Course Readiness for Implementation.**

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28 November 2007

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Executive Summary

On 30 July 2007 the Round B teacher juries were convened to determine the Mathematics (MAT) and Mathematics: Specialist (MAS) course readiness for accreditation. The jury recommendations were implemented and validation of their implementation undertaken by the Independent Consultant.

The Mathematics and Mathematics Specialist courses were accredited by Council on 4 October 2007.

A second round of juries for the Mathematics and Mathematics: Specialist courses, held on 21 and 22 November respectively, focused on course implementation for these subjects.

In response to a recommendation from the first Mathematics jury, thirty jurors were convened for a full day on 20 November, with ten jurors each looking at Stages 1, 2 and 3 respectively of the Mathematics course.

A four hour jury consisting of nine jurors, held on the evening of 21 November, considered the readiness for implementation of the Mathematics Specialist course.

Both juries considered formal documentation, written submissions and [input from Mathematics and Mathematics: Specialist curriculum writers as part of their deliberations](#).

The Curriculum Council's incorporation of jury recommendations into the courses will be validated by the Independent Consultant early in 2008. Validation involves an independent review of the documentation (evidence) about the level of satisfaction by each subject teacher cohort with the Curriculum Council's incorporation of jury recommendations into courses. The validation process for each course has been designed by the Council in accordance with the jury requirements for each course.

The Round B jury process has provided teachers with an opportunity to further enhance the development of Senior Secondary School courses.

Please note: This report needs to be read in conjunction with Teacher Jury Report 2 on the readiness of the mathematics courses for accreditation and the Teacher Jury Validation Report for Stages 1-3. Copies of these reports can be downloaded from: http://newwace.curriculum.wa.edu.au/pages/teacher_juries.asp

Acknowledgements

Thank you to jurors, submission writers, facilitators, secondary teaching community, Curriculum Council and media for being prepared to embrace the Teacher Jury process. In particular:

- Jurors for the professional manner in which they approached their important charge – to determine the readiness of the Mathematics and Mathematics: Specialist Courses for accreditation.
- Media for enabling the process to be completed away from the media spotlight, including respecting the confidentiality of the Jurors and enabling them to focus on their important task at hand.
- Submission authors for their considered guidance, including being prepared to address the Jury if required.
- Aha! Consulting for its assistance with the administration of this round of juries.
- Independent facilitators Joel Levin, Marie Martin, Christine Moro and Colin Penter and their assistants (scribes) for the application of their skills, experience and professionalism.
- Mr Dave Wood Chief Executive Officer, and staff of the Curriculum Council for their ongoing support of the process, provision of necessary resources and for the opportunity to work with a number of very dedicated Curriculum Council staff. Special thanks to the key contacts at the Curriculum Council Gail Wright and Bernard Clayton.



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28 November 2007

Facilitators:

Mr Joel Levin



Dr Marie Martin



Ms Christine Moro



Mr Colin Penter



Round B Teacher Juries

Background

Following an announcement by the Hon. Mark McGowan, Minister for Education and Training on 22 January 2007, a process commenced to establish 48 teacher juries¹. The purpose of these juries was to provide independent advice and recommendations for each upper secondary school course to the Curriculum Council and the Minister.

Dr Christina Gillgren, from the Department of the Premier and Cabinet, was appointed as the independent consultant to design and oversee this program of consultation through the jury process, and to also ensure the integrity of the process. The jury process involved three steps: initial engagement (information provision), the jury, and independent validation of the implementation of each jury's recommendations.

Juries on 48 courses were held between April and September 2007 in three rounds:

- Round A juries, held in April-May 2007, consisted of 38 juries relating to the readiness of courses scheduled for implementation in 2008.
- Round B juries, held on 30 July 2007, consisted of two juries for the Mathematics and Mathematics Specialist courses, and focussed on their readiness for accreditation.
- Round C juries, held in August-September 2007, consisted of eight juries relating to courses already under implementation. The focus of these juries was to provide input and feedback on each course syllabus and its implementation. This round of juries included the English course two-day jury.

The final report for each round of juries was presented to the Minister for Education and Training, the Chair of the Curriculum Council and the CEO of the Curriculum Council, and detailed each jury's recommendations. The reports were also made available for stakeholder and public scrutiny on the Curriculum Council's website at http://newwace.curriculum.wa.edu.au/pages/teacher_juries.asp.

Round B Juries

The juries for Mathematics and Mathematics Specialist courses were unique in that the jury focus was accreditation of each course. This also necessitated a second phase of juries to look at course implementation of the accredited course, once the recommendations were addressed, independently validated and accredited.

The Mathematics and Mathematics Specialist courses were accredited by the Curriculum Council on the 4 October 2007.

The Mathematics jury on course accreditation called for more time for the second jury (implementation phase) to deliberate on each stage (Stages 1, 2 and 3) of the Mathematics course. Consequently, the Mathematics jury was constituted as a whole day jury on 20 November 2007 and consisted of 30 jurors, 10 jurors focusing on Stages 1, 2 and 3 respectively.

¹ There are 50 courses for upper secondary schools; two of these courses have just been introduced and did not require jury deliberations, as there is no prior experience in teaching these courses available.

The Mathematics: Specialist course was held on 21 November 2007 between 4:15 pm and 8:30 pm.

Register of commitments

The Minister of Education and Training and the Curriculum Council have made the commitment to respect all jury recommendations in regard to the implementation of the courses.

Jury Process: Lessons learnt and ongoing learning.

The complexity associated with the jury project for the 48 upper secondary school courses called for a process that included flexibility to accommodate the varying stages of course implementation and ongoing quality assurance practices that are integral to any consultation process. The amendments made to the Round B-C jury process included the provision of clearer, more-detailed information about jury processes and jury questions being provided to jurors prior to the jury being convened. Information regarding submissions to juries was also clearer in order that jurors were fully cognisant of the uses of information provided by submission authors and also the availability of these authors to provide verbal responses to questions posed by jurors.

Juries had an independent facilitator and scribe present at all sessions. Given the complexity of the jury decisions, jury times were amended, with either one extra hour to make their deliberations (i.e. 4:00 pm – 8:30 pm) or extended to 1-2 day juries as was the case with English (2 days) and Mathematics (1 day). Finally, information about the next steps including validation of implementation of the jury recommendations was provided as soon as possible after the jury decisions/ outcome.

Independence, Professionalism and Integrity.

Please refer to Teacher Jury Report 1: on the readiness of the new senior secondary courses due for implementation in 2008, for a full explanation of the independence, professionalism and integrity processes applied across all Teacher Jury rounds.

Selection of Facilitators and Scribes

As with Round A juries, the jury facilitators were selected through a tender process consistent with the requirements of the State Supply Commission and the Department of Treasury and Finance. For Round B-C Teacher Juries, scribes were introduced for all juries to assist facilitators in the documentation of jury decisions and recommendations for sign off at end of the evening of the jury.

Round B Teacher Juries: Call for Submissions

A public call was made for submissions for the Group B 2nd phase juries, via advertisements in *'The Western Australian'* (17 and 20 October 2007) and the *'The Sunday Times'* (14 October 2007) newspapers. The submission deadline was extended to Friday 2 November 2007, in line with concerns that not enough time had been given to submission writers to prepare a submission.

Teachers, schools, professional organisations, and tertiary organisation representatives contributed 35 (14 for Mathematics: Specialist/MAS and 27 for Mathematics/MAT) submissions overall. Four submissions were fully endorsed by a second submission writer.

Consistent with international best practice in community engagement and the need for transparency, the names of the submission writers were made public on the Curriculum Council website once the juries had been convened.

After the jury had been convened, the submissions were also placed on the Curriculum Council website listed in numerical order according to receipt to ensure there was no individual association with author names.

Submission Timeline

In response to concerns about the short timeline for submissions, the submission deadline was extended from 29 October to 2 November 2007.

Logistics and Support

Funding of jury participation

Please refer to *Teacher Jury Report 1: On readiness of new senior secondary courses due for implementation in 2008*, for an account of the general logistics supplied to teacher juries.

Preparation and Pre-reading

Pre-reading for the Mathematics and Mathematics: Specialist juries included two information packages sent to jurors containing a detailed description of the jury process (inclusive of agenda and jury question), copies of the submissions relevant to the jury, a copy of the course materials (as listed below and on the Curriculum Council website) and administrative details.

Papers relating to Mathematics (MAT)

	Document name
	1.0 General course information
1.1	Agenda/Key points about the senior school reform
	2.0 Jury recommendations and action taken
2.1	Jury recommendations and action taken
	3.0 The Mathematics course
3.1	Mathematics course
3.2	Mathematics scope and sequence document
3.3	Pathways document
3.4	What has changed?
	4.0 CAS Calculators
4.1	CAS calculator implementation
4.2	Discussion paper (resource-free examinations)
	5.0 Sample Support Materials
	PA/Stage 1
5.1	Mathematics/sample program/unit PAMAT
5.2	Mathematics/PAMAT/sample tasks
5.3	Mathematics/ sample program/unit 1B
5.4	Mathematics/ sample program/unit 1C
5.5	Mathematics/unit 1B/sample project
5.6	Mathematics/unit 1B/sample test items
	Stage 2
5.7	Mathematics/ sample program/unit 2C
5.8	Mathematics/ sample program/unit 2D
5.9	Mathematics/ sample program/unit 3A
5.10	Mathematics/ sample program/unit 3B
5.11	Sample Investigation unit 3BMAT

6.0 Examinations

- 6.1 Examination design brief for the Mathematics course
Examinations: 2C/2D
- 6.2 Mathematics 2C/2D sample examination resource-free
- 6.3 Mathematics 2C/2D sample examination resource-rich
- 6.4 Mathematics 2C/2D sample examination marking key
Examinations: 3A/3B
- 6.5 Mathematics 3A/3B sample examination resource-free
- 6.6 Mathematics 3A/3B sample examination resource-rich
- 6.7 Mathematics 3A/3B sample examination marking key
Examinations 3C/3D
- 6.8 Mathematics 3C/3D sample examination resource-free
- 6.9 Mathematics 3C/3D sample examination resource-rich
- 6.10 Mathematics 3C/3D sample examination marking key

7.0 Grade descriptors

- 7.1 Proposed grade descriptors for the Mathematics and Mathematics: Specialist courses

Papers relating to Mathematics: Specialist

	Document name
1.0	General course information
1.1	Agenda/Key points about the senior school reform
2.0	Jury recommendations and action taken
2.1	Jury recommendations and action taken
3.0	The Mathematics: Specialist course
3.1	Mathematics: Specialist course (Accredited Version)
3.2	Mathematics: Specialist/Scope and Sequence
3.3	Pathways document
3.4	What has changed?
4.0	CAS Calculators
4.1	CAS calculator implementation
4.2	Discussion paper (resource-free examinations) (MAT and MAS)
5.0	Sample support materials
5.1	Sample program 3A/3BMAS (in progress)
5.2	Mathematics: Specialist/content times
6.0	Examinations
6.1	A draft Examination design brief for the Specialist (MAS) course
	EXAMINATIONS 3C/3D
6.2	Mathematics: Specialist 3C/3D sample examination resource-free
6.3	Mathematics: Specialist 3C/3D sample examination resource-rich
6.4	Mathematics: Specialist 3C/3D sample examination marking key
7.0	Grade descriptors
7.1	Proposed grade descriptors for the Mathematics and Mathematics: Specialist courses

Jury Venue

The Mathematics whole day teacher jury was held at The Boulevard Function Centre, Floreat on 20 November 2007, with thirty jurors in attendance.

The Mathematics Specialist Course was held at Penrhos College Middle School Learning Centre on 21 November 2007 from 4:15 pm to 8:30 pm, with nine jurors attending. Appropriate meals and refreshment were provided for each jury, which respected individual dietary requirements. Additionally, transport was arranged for teachers from rural and remote sites, who were staying at accommodation arranged by the Curriculum Council.

Jury Program

The program for the Mathematics jury catered for the three Mathematics Stages in response to the jury recommendation from the Mathematics Accreditation jury held in July 2007.

Mathematics Teacher Jury Program Tuesday 20 November 2007 8:45 for 9:00 am - 3:30 pm

TIME	TASK
8:30	Jury member registration Table Allocation, Welcome Tea/Coffee
9:00	Opening <ul style="list-style-type: none"> • Introduction • Welcome – David Wood (CC CEO) and Christina Gillgren (Independent Consultant)
9:10	Deliberation guidelines for day Focus question for the day <u>Key Question:</u> <i>“What further improvement to existing support materials, and what additional support will be required, to ensure teachers are adequately prepared to begin implementing these courses in 2009”.</i>
9:30	Introductions Resources check (does everyone have everything) Questions for CC and/or Submission writers
9:50	Submission writers <ul style="list-style-type: none"> • Questions
10:10	Curriculum Council - Presentations <ul style="list-style-type: none"> • CAS Calculator implementation plan • Broader implementation plan
10:15	Curriculum council writers <ul style="list-style-type: none"> • Questions
10:45	Tea break
11:00	Recommendation Development <ul style="list-style-type: none"> • Three tables of 10 jurors • Stage 1, 2 and 3 • Answer the focus question
12:25	LUNCH BREAK
1:10	Recommendations: <ul style="list-style-type: none"> • Presentation stage 1 group
1:35	Recommendations: <ul style="list-style-type: none"> • Presentation stage 2 group
2:00	Recommendations: <ul style="list-style-type: none"> • Presentation Stage 3 group
2:25	Afternoon tea
2.45	Review report
3:15	Closing and sign off. Confidentiality Letter Evaluation form and thank you
3:20	END

The Mathematics Specialist jury followed a standard process, developed as part of the integrity group deliberations.

Mathematics: Specialist Teacher Jury Program
Wednesday 21 November 2007
4:00 for 4:15 pm – 8:30 pm

4:00pm Registration	Afternoon tea supplied – Please provide all administrative forms to the officer on the registration desk
4:15 – 4:35pm	<ol style="list-style-type: none"> 1. Welcome 2. Purpose of the Jury 3. Invitation to adjourn to 'Jury Room'
4:35 – 4:50pm	<ol style="list-style-type: none"> 1. Introductions 2. Ground Rules 3. Course Materials Packs 1 and 2.
4:50 – 6:00pm	<ol style="list-style-type: none"> 1. Identify points for clarification from submission authors and curriculum writers. 2. Submission authors and curriculum writers attend to answer questions as required by the jury.
6:00 - 6:20pm	Dinner break in room
6:20 – 7:00pm	<ol style="list-style-type: none"> 1. Deliberation and/or curriculum writers/submission writers if needed.
7:00 – 7:30pm	<ol style="list-style-type: none"> 1. Informal discussion 2. Developing recommendations and decisions.
7:30pm – 8:10pm	<ol style="list-style-type: none"> 1. Finalise decisions and recommendations
8:10 – 8:20	Tea break in room
8:25pm – 8:30pm	<ol style="list-style-type: none"> 1. Jury Report sign off 2. Evaluation form completion 3. Distribution of confidentiality letter 4. Thank you

Ground Rules

Consistent with international best practice in facilitation and conflict resolution, each jury operated within a ground rule environment, providing a strong framework for respect and an equal opportunity to contribute by jurors. The jury ground rules were:

- All participants have an equal right to put their views.
- We will provide others with time to share their views.
- While others may have views that we strongly disagree with, we respect each person's right to hold that view.
- We will not interrupt each other.
- We will ensure that all discussions and the identity of jurors and submission writers remains confidential to this jury room

The jurors were assisted with posters describing the jury role, which included the ground rules and the jury questions. Facilitators provided information to the jury about the role of submission authors and the Curriculum Council.

A feedback form was provided to jurors to assist in evaluating the effectiveness of the jury.

Submission Authors and Curriculum Writers

Submission authors were provided with the opportunity to attend on the day/night of the Mathematics and Mathematics - Specialist jury, either in person or via telephone, to provide clarification to the jury if required.

For the Mathematics Jury, one author attended and 9 authors representing 16 submissions made themselves available by phone. Seven authors made themselves available for the Mathematics: Specialist jury by phone.

Mr David Wood, CEO of the Curriculum Council attended both juries and addressed the jurors on a number of issues relating to the implementation plan for the Mathematics courses, taking a number of questions on these issues. These included the decision to include CAS calculator technology and related support and professional development.

Curriculum Writers and Managers were also in attendance on the jury night to provide advice on the capacity of the Curriculum Council to deliver on jury recommendations.

Questions for Juries

It was determined that the juries needed to provide an answer to a core question about each of the Mathematics Courses:

“What further improvement to existing support materials and what additional support will be required to ensure teachers are adequately prepared to begin implementing these courses in 2009?”

Where juries made recommendations, facilitators were asked to guide jurors away from general comment and fully explain what needed to be done. For example, jurors were asked to identify what was not clear, or where there was insufficient information. Where relevant, jurors were also asked to provide specific statements and supporting examples where possible.

Jury Reports

The jury scribes were required to detail notes of the decision and recommendations from each teacher jury into a typed template format. Scribes and facilitators regularly checked the content of the draft report for accuracy with jury members. The final report was distributed among jurors for confirmation on the day/night of the jury. Please refer to Appendices 1 and 2 of this report for a full record of each jury's outcomes.

Jurors reviewed each page of the typed report, and signed off on the final recommendations.

Jury Decisions

All jury decisions and recommendations were confirmed on the day/night, with specific advice provided by the Curriculum Council on the feasibility of timelines as indicated by jurors.

Jurors signed off on the report at the completion of the jury, confirming that the report was a faithful account of decisions and recommendations.

Please refer to the jury reports for all decisions and recommendations made by the Mathematics and Mathematics: Specialist juries.

Themes

Whilst the role of the jurors was to focus on the readiness of the course for implementation based on the course documents and all other available supporting material, the Mathematics and Mathematics: Specialist jurors highlighted a number of concerns that impeded decision making.

Jurors at the Mathematics jury in particular felt very frustrated by the division of responsibility between the Curriculum Council, the Education Department, individual schools and the education system sectors generally (eg. professional development at the school level; provision of text books). They believed that there was too much 'this is not my area of responsibility', and they were left to fill in the blanks.

Jurors attested that there is a need for at least one text which provides information about the depth and breadth of the content to be taught. This was seen as an essential part of the implementation of the course and not something that may be negotiated with publishers. They were also concerned about issues of equity in regard to resourcing schools to deliver these courses of study. Again, this is seen as central issue in course implementation.

The issue of CAS calculators was a key point with both juries expressing their frustration regarding the lack of consultation with teachers on their introduction.

The decision to convene a whole day jury for the Mathematics course, focussing on Stages 1, 2 and 3 independently was deemed highly useful. Jurors strongly urged the use of consultative approaches such as the jury method for the ongoing design and implementation of courses.

Feedback

Feedback on the Jury process was gained formally through the evaluations completed by each jury member at the close of the jury (refer to Appendices 3, 4 and 5) as well as informally through correspondence and unsolicited feedback.

Jurors expressed strong support for the jury process and called for more collaborative consultative processes in course design, development and implementation.

Validation of Engagement – Round B Courses

The Curriculum Council has developed a plan for validation of jury decisions and recommendations. For the Mathematics and Mathematics: Specialist courses, the first round validation of the jury's decision and recommendations was undertaken by a reference group comprising of stakeholders. The reference group determined that the recommendations of the jury had been fully completed by the Curriculum Council to the standard required by the jury. The Independent Consultant undertook validation for these courses in October 2007 and confirmed the evidence that jury recommendations had been implemented to the satisfaction to the teacher cohort (via stakeholder group and independent validation).

Conclusion

The jury process has provided teachers with an opportunity to further enhance the development of Senior Secondary School courses.

For the Mathematics and Mathematics: Specialist courses, the opportunity was for teachers to provide input into their speciality areas to determine if the syllabus/course was ready for implementation. There is a high level of confidence that all jurors acted with integrity and professionalism throughout the jury process.

The juries had have provided a number of recommendations for the Curriculum Council to consider.

The Independent Consultant, together with the team of facilitators, note that there are a number of systemic issues that have consistently been raised throughout the jury process that underpin many of the problems and much of the frustration and lack of trust experienced by teachers. These include:

- Issues such as resourcing in schools, timetabling and professional development at the school level;
- Development of text books and resource materials; and
- The need for equitable resourcing of schools in lower socio-economic areas or in remote locations.

In the interest of building stronger connection and collaboration between teachers and the whole education sector, it is strongly recommended that these systemic issues are addressed as soon as possible, with input and feedback from all stakeholders.

Appendices

- Appendix 1: Mathematics (MAT) Course Jury Report
- Appendix 2: Mathematics Specialist (MAS) Jury Report
- Appendix 3: Teacher Jury Evaluation Questionnaire
- Appendix 4: Evaluation Summary for the Mathematics (MAT) Jury
- Appendix 5: Evaluation Summary for the Mathematics Specialist (MAS) Jury
- Appendix 6: Summary of Qualitative Responses to both MAT and MAS Evaluation Questionnaires

**Jury Report: Mathematics Jury
20th November 2007**

No. of JURORS: 30
CONSULTANT: Dr Christina Gilgren

LEAD FACILITATOR: Joel Levin

FACILITATORS:
Marie MARTIN
Christine MORO
Colin PENTER

SCRIBES:
Darlene NEWITT
Jennifer HERON (Lead Scribe)
Joyce ARCHIBALD

“What further improvement to existing support materials, and what additional support will be required, to ensure teachers are adequately prepared to begin implementing these courses in 2009?”

In addressing this question, jurors made two statements as precursors to what follows:

1. The previous MAT jury made a recommendation to put the implementation of the CAS calculators on hold whereas the MAS jury recommended concurrent implementation. In making its decision to proceed with CAS calculators, the Council has gone with the minority view. There is a concern that a consultative approach was not used in relation to the implementation of CAS calculators.
2. The timely availability of texts and resources are a fundamental requirement for implementation in 2009.

Issues Common to All Stages	Recommendations Common to All Stages (with PRIORITY)
Pathways	
<ul style="list-style-type: none"> <i>In order to provide counselling for students we need to know the pre-requisites of the various Universities and TAFEs. Information books are prepared for students in April and pre-requisite information needs to be available by then.</i> <i>Universities are determining the curriculum but their pre-requisites don't reflect the skills they want.</i> 	<ol style="list-style-type: none"> 1. That pre-requisites for courses be detailed, appropriate and realistic and available by end of Term 1, 2008 (HIGH)
<ul style="list-style-type: none"> <i>Too many pathways are impacting on schools that may not have the capacity to deliver the number of pathway options.</i> <i>New pathways are locking up the timetables of schools.</i> <i>Starting TEE exams earlier is not giving enough time to cover the course in Year 12.</i> 	<ol style="list-style-type: none"> 2. Detailed investigation to be undertaken into the issue of the difference in the length of Year 11 and 12 years in respect to Stage 2 and Stage 3 courses being undertaken by both years, and Years 11 and 12 students in the same class. (HIGH)
<ul style="list-style-type: none"> <i>Impact of Country Week on the amount of time available to teach in country areas.</i> 	
<ul style="list-style-type: none"> <i>Response from the CC that timetabling 'is a school based issue' is not satisfactory. While it may appear that there are more choices for students under the new WACE, many schools (especially small schools) will not be able to offer all the pathways possible. Administrators are having difficulty working out new ways of timetabling.</i> 	<ol style="list-style-type: none"> 3. CC needs to listen to concerns and take responsibility for the changes that are being introduced. The group recognises that some decisions are school-based, but the response of 'timetabling is a school issue' is not a 'fix-all' for issues related to timetabling, number of pathways and length of time to deliver the courses. (HIGH) 4. CC to present three different models that show how the pathways can be delivered for different school sizes. (HIGH) 5. Admin people within schools to have sufficient time to address timetabling issues. (HIGH) 6. Create a 'network/hub' of schools whereby schools that are larger/ better resourced can assist smaller schools with issues. Note time needs to be allowed for teachers to participate. (MEDIUM)

Assessment	
<ul style="list-style-type: none"> Teachers are not clear to what extent a particular content area needs to be assessed. Need assessments to be linked to course content 	<p>7. Develop more sample assessments for each dot point of the syllabus that provide an indication of the depth/level of difficulty, by Week 5 of Term 1, 2008. (HIGH)</p> <p>8. Need grade related descriptors for each Unit showing examples of evidence for judging grades with links to assessments, identified as simple or complex.</p>
<ul style="list-style-type: none"> Investigations are difficult to create, particularly at this stage when teachers are not familiar with the new course 	<p>9. Provide a clear definition of what 'Investigation' is. (HIGH)</p> <p>10. Develop examples of investigations for each content area with marking guides to clarify what is expected of this type of assessment at each Stage. (HIGH)</p>
Resources	
<ul style="list-style-type: none"> Texts – The textbooks define what the Curriculum is, therefore there is required an example (template) book written for teachers resource to show the depth and extent to which we are to teach particular concepts. 	<p>11. Texts for each Unit, sequential for each Unit to be ready by mid 2008. (HIGH)</p> <p>12. If texts cannot be produced by June 2008, CC to provide quality support material for teachers and students that matches the new syllabus content. This could be put on CD and distributed to teachers by June 2008. (HIGH)</p>
<ul style="list-style-type: none"> Insufficient resource material available – this is a timeline issue particularly relevant to Maths teachers. 	<p>13. Detailed weekly programs with recommended published texts and a copy of draft text that matches the new syllabus content by Week 5 Term 1, 2008, to be discussed at first PD on April 28. (HIGH)</p> <p>14. At least one published text book by end of semester one 2008. (HIGH)</p>
<ul style="list-style-type: none"> It is not clear the extent to which each concept needs to be taught. 	<p>15. A full draft text that gives examples of each of the dot points of the syllabus be written by the end of Term 1 2008. (HIGH)</p> <p>16. Teacher support materials (hard copies) are required for new content (e.g. statistics 3B and 3D). (HIGH)</p> <p>17. Detailed weekly programs both for consecutive and concurrent courses by Week 5 Term 1 2008. (HIGH)</p>
Professional Development	

<ul style="list-style-type: none"> • <i>Value of 'mass' PD.</i> • <i>Professional Development needs to involve interactive workshops, not only presentation and demonstration.</i> 	<p>18. Professional Development to involve the use of interactive workshops. (HIGH)</p> <p>19. The first professional development session in April to enable teachers to have input into draft versions of texts and support materials. (HIGH)</p>
<ul style="list-style-type: none"> • <i>October PD date is too late.</i> • <i>In service: opportunities for staff to look at work material programs, investigations.</i> 	<p>20. Additional PD required in the first half of 2008 to enable sufficient integration of learning into school programs in addition to proposed CC PD. (HIGH)</p> <p>21. Live and CD PD to be provided. CD to provide detailed examples, syllabus, programs and assessments in an <u>editable</u> format by June 2008. (HIGH)</p>
<ul style="list-style-type: none"> • <i>Some teachers may not be familiar with content of courses</i> 	<p>22. In service required for content of courses. (HIGH)</p> <p>23. On-line modules addressing course content be provided for teachers to learn the new content of the course. (HIGH)</p>
<ul style="list-style-type: none"> • <i>Hard to gauge depth of courses</i> 	<p>24. In service required for content of courses. (HIGH)</p>
<ul style="list-style-type: none"> • <i>Relief teachers to allow teachers to attend PD.</i> 	
<ul style="list-style-type: none"> • <i>It takes time to assimilate new information.</i> 	<p>25. PDs need to continue through 2009.</p>
<p>Other</p>	
<ul style="list-style-type: none"> • <i>Needs to be a review of the Annual Course</i> 	<p>26. A review of each course on an annual basis take place in Term 4 involving teachers.</p>

Issues and Recommendations for Stage 1

In addressing the question, jurors for Stage 1 made several statements as precursors to what follows:

1. Recognition needs to be given that many teachers of Stage1 are non-Maths specialists **and that, therefore**, programs, course materials and assessments need to recognise this.
2. Submission writers note that Stage 1 is an improvement on previous MIP and MWM courses because of its Maths focus rather than a literary focus.
3. CC to be aware that students taking PA, PB and Stage 1 courses may be more likely to take single Units.

In addition to the issues and recommendations discussed above, the following Issues and recommendations are pertinent to Stage 1.

Issues for Stage 1	Recommendations for Stage 1
Pathways	
<ul style="list-style-type: none"> • <i>Lack of detail re students with learning disabilities</i> 	27. Programs to be provided by CC for the students with learning disabilities to have a chance to achieve. 28. Have an achievement scale for those students who are unable to complete PA/PB MAT rather than completed or non-completed. (i.e. those students with learning difficulties).
Assessment	
<ul style="list-style-type: none"> • <i>Sample assessments to include 3 investigations, 3 response type including marking keys for each Unit</i> 	29. CC to develop two investigations that are specific to outcomes for each Unit, (eg: number, space & measurement) in the context of business, building, hospitality etc. (June 2008)
<ul style="list-style-type: none"> • <i>Amount of assessment attached to proportion to investigations</i> 	30. The number of specified assessment a should be a school decision
<ul style="list-style-type: none"> • <i>Current weightings of assessment types across stages are in the reverse order of student ability</i> 	31. Adjustment needed of weighting of response and investigation at Stage 1 32. Recommend reversal of current weightings or 40 to 60% range for both types.
<ul style="list-style-type: none"> • <i>PA courses need a different assessment</i> 	

Resources	
<ul style="list-style-type: none"> • <i>Lack of textbook in ed support</i> 	33. Textbooks required for each Unit. (HIGH)
<ul style="list-style-type: none"> • <i>What type of calculator is recommended for Stage 1</i> 	34. Clarification needed regarding calculator needed for these Units. (HIGH) 35. The CC should recommend in consultation with practitioners at that level a policy re what type of calculator is to be used in Stage 1 and PA and PB Maths, whilst allowing schools some leeway re that decision. (HIGH)
Other	
<ul style="list-style-type: none"> • <i>Teachers need support in knowing what to teach.</i> 	36. Detailed programs need to be user friendly, bearing in mind the fact that non-Maths specialists are teaching this subject. (HIGH) 37. Detailed program required for week by week or day by day. 38. Programs to be based on semester and year long Units for both Year 11 and 12. 39. A huge range of samples and programs to be provided by CC.
<ul style="list-style-type: none"> • <i>Lack of consultation with TAFE, school and CC re matching with TAFE Hospitality and Tourism, Building and Construction, Business Studies.</i> 	40. CC needs to develop programs and packages of work that are matched with VET and TAFE programs. (HIGH)

Issues and Recommendations for Stage 2

The jury was split about two decisions relevant to Stage 2 and asks the Curriculum Council to further consider these issue through a reference group inclusive of juror representatives

1. the need for a 'resource-free' section in Stage 2.
2. allowing scientific calculators in resource-free sections of exams to prevent artificially limiting the breadth of questions being asked in exams.

In addition to the issues and recommendations discussed above, the following Issues and recommendations are pertinent to Stage 2.

Issues for Stage 2	Recommendations for Stage 2
Assessment	
<ul style="list-style-type: none"> • <i>Unclear if resource-free component of exams applies to tests/other assessments.</i> 	41. CC to clarify resource-free component of exams and how this applies to tests/other assessments. (MEDIUM)
<ul style="list-style-type: none"> • <i>Concern about inconsistency with comparability.</i> 	42. Moderation workshops required in the first term of the year of implementation to address inconsistency with comparability. (MEDIUM)
Examinations	
<ul style="list-style-type: none"> • <i>'Cut and paste exam' examples from previous exams is not good enough – don't reflect the new courses.</i> 	43. Current support exams are inadequate - develop exams tailored to the new courses. These needs to have greater depth and of three hours' duration. (HIGH)
Resources	
<ul style="list-style-type: none"> • <i>Presenting CAS calculator instruction.</i> 	44. CC to investigate how emulators/projectors to help deliver CAS instruction in schools will be funded e.g. discuss with suppliers. (MEDIUM) 45. Item bank of new exam test questions that are CAS specific and resource-free specific to be supplied by CC. (HIGH)

Professional Development	
<ul style="list-style-type: none"> <i>Lack of knowledge of CAS calculators.</i> 	<p>46. Have a video and/or interactive DVD on how to use CAS calculators available. (HIGH)</p> <p>47. Introduce 'train the trainer' programs in the use of CAS calculators. (HIGH)</p>
Other	
<ul style="list-style-type: none"> <i>The cost of introducing new resources to schools/families.</i> 	<p>48. Establish a pool of funds that schools across all sectors can approach to fund new technology requirements (e.g. CAS calculators and associated technology). (HIGH)</p>

Issues and Recommendations for Stage 3

In addition to the issues and recommendations discussed above, the following Issues and recommendations are pertinent to Stage 3.

Issues for Stage 3	Recommendations for Stage 3
Pathways	
<ul style="list-style-type: none"> <i>That students who fail at Stage 3 in Year 11 have alternatives available to them in Year 12</i> 	49. That the Curriculum Council consider the issue of students who fail Stage 3A/3B courses in Year 11, (e.g. do Stage 2C/2D or repat 3A/3B) as we do not think that resubmitting work is appropriate. (MEDIUM)
Examinations	
<ul style="list-style-type: none"> <i>The exam questions must reflect the content of the course</i> 	50. Sample exam questions contain new examples not previously seen and that are specifically related to the dot points in the new content. (HIGH)
<ul style="list-style-type: none"> <i>That teachers need to be able to review the exam in a timely manner in order for fairness for students to achieve in future exams</i> 	51. Teachers have the opportunity to formally review the examinations from Stages 2 and 3 after TEE Examinations in 2010 (with the review taking place in early Term 1, 2011)
<ul style="list-style-type: none"> <i>The Council has proposed quarantining the syllabus the resource free exams</i> 	52. All syllabus content should be available for use in both resource free and resource rich papers. (HIGH)
Resources	
<ul style="list-style-type: none"> <i>Clear differentiation needed re Non resource components versus resource components in course</i> 	53. Clarity about where the CAS Calculator can be used for teaching the content. (HIGH) 54. Clarity about resource-free assessments. (HIGH) 55. That a CAS Calculator IT specialist be employed to write resources specific to the use of the CAS Calculator and where and why it would be an improvement on the graphic calculator. (HIGH)

<ul style="list-style-type: none"> • <i>CAS Calculator - Equity issues re purchasing of CAS Calculators across the board</i> 	56. Funding must be made available to students in schools to purchase CAS Calculators. (HIGH)
<ul style="list-style-type: none"> • <i>Lack of the availability of Data Projector and Electronic Tablet resources availability in classrooms in order to teach the students other resources are needed to teach students how to use the CAS Calculators</i> 	57. Data Projector and Electronic Tablet be provided for each classroom where the Maths subjects are taught. (HIGH)
Professional Development	
<ul style="list-style-type: none"> • <i>Need more time for PD in order to learn CAS Calculator and new course</i> 	58. Provide CAS calculator PD online. (HIGH)
<ul style="list-style-type: none"> • <i>Need expert consultants assistance available for schools</i> 	59. The Curriculum Council employ a calculator or IT consultant/s to be available to schools via telephone, website or in person to provide instruction on an individual consultation basis. (HIGH)
Other	
<ul style="list-style-type: none"> • <i>Recognising top level students</i> 	60. Review scaling system to provide additional incentives and rewards to students studying top level Units. (HIGH)

FINAL RECOMMENDATION

61. The teachers appreciated the opportunity to participate in this jury and encourage the Curriculum Council to continue these processes of consultation.

No submission authors were called

Mr David Wood, CEO of the Curriculum Council, addressed the jurors and answered questions from the jury

All jurors and the facilitator signed that they had read and agreed that this report on the outcomes of the Maths Specialist course jury is a true and faithful transcript of the jury discussion and recommendations.

Appendix 2: Mathematics – Specialist Course Jury Outcomes

**Jury Report: Mathematics: Specialist
21 November 2007**

No. of JURORS: 9

FACILITATOR: Joel Levin

SCRIBE: Sally Lynch

“What further improvement to existing support materials, and what additional support will be required, to ensure teachers are adequately prepared to begin implementing these courses in 2009?”

Issue	What recommendations does this jury make to address the issues identified? place priorities {HIGH or MEDIUM} at the end
Pathways	
<ul style="list-style-type: none"> • <i>Concern that the time allocations required to cover the course is insufficient. This will be compounded with the bringing forward of the year 12 exams.</i> 	<ol style="list-style-type: none"> 1. Need week by week program to show how the material and assessments can fit into the 55 hours allowed for the course (by unit and year). This program needs to demonstrate how it might fit with the extra curricular requirements of schools. (End of term 2 2008) 2. Need to show how MAS/MAT will work together in a week by week program over the same timeframe (unit and year). (End of term 2 2008)
<ul style="list-style-type: none"> • <i>Students do not know how courses link to University.</i> 	<ol style="list-style-type: none"> 3. Teachers and schools to be informed of the University pre requisites by the end of term 1 2008.
<ul style="list-style-type: none"> • <i>If MAS is not a prerequisite for University entry</i> 	<ol style="list-style-type: none"> 4. Curriculum Council to strongly urge Universities to set pre-requisites that will include a MAS requirement for courses such as engineering, physics and maths etc.

<i>students will not take the course.</i>	
<ul style="list-style-type: none"> <i>The required levels of approval to do MAS course of study as a standalone is currently restrictive</i> 	5. A clear set of guidelines and potential consequences for choosing MAS as a standalone course, enabling school level decisions and easier access for this option. (End of term 1 2008)
Assessment	
<ul style="list-style-type: none"> <i>The proposed scaling does not cater for students who are doing 3C and 3D MAS/MAT.</i> 	6. Need a double increment for students doing 3C and 3D to maintain the incentive and reward difficulty. (end term 1 2008)
<ul style="list-style-type: none"> <i>The proposed grade descriptors are an improvement but still provide insufficient information about grading.</i> 	7. Add a set of exemplars to the current grade descriptors. (End term 3 2008)
<ul style="list-style-type: none"> <i>Inconsistent application of grades between schools.</i> 	8. Processes be undertaken to increase consistency of grades. Sufficient consensus meetings in the first semester of 2009.
Examinations	
<ul style="list-style-type: none"> <i>Although exams state full marks may not be given for students who do not show full workings. Marks are still awarded for correct answer that do not show workings. This is leading to not completing exams for lack of understanding of how to show workings.</i> 	<p>9. CC to clarify how examination panels are applying the requirement to show workings. (term 1 2009)</p> <p>10. CC to provide exemplars as to what sufficient workings need to be demonstrated in the resource rich and resource free sections. And instances where it would be penalised. (term 1 2009)</p>
<ul style="list-style-type: none"> <i>Insufficient information on the coverage of the resource free exam.</i> 	11. CC to provide information to demonstrate how the resource free exam will reflect the weightings of the course outcomes. (term 1 2008)
Resources	

<ul style="list-style-type: none"> • <i>Understanding where and how to use CAS calculators in this course of study.</i> 	<p>12. Fully funded face to face PD's (at least 8 hours) that is specific to this MAS course on how and where to use CAS calculator. (end term 3 2008)</p> <p>13. Provide cross referenced listing of how CAS might be used for WA syllabus. (as per Victorian example.) Provided in appendix A. (end term 3 2008)</p> <p>14. Provide drip feed mini tutorials (eg emails, faxes) on specific CAS tasks to prevent information overload. (commence asap, delivery ongoing)</p> <p>15. Availability of people to assist with learning the use of CAS calculators. (eg online, help desks) (ongoing)</p>
<ul style="list-style-type: none"> • <i>Unclear what portions of the syllabus can be examined in a resource free exam.</i> 	<p>16. Need a large bank of resource free exam questions. (end term 3 2008)</p>
<ul style="list-style-type: none"> • <i>The introduction of resource free exams will require a change in the level of skills in students entering year 11 MAS.</i> 	<p>17. CC to provide a clear list of pre-requisite skills for entry into year 11 MAS.</p> <p>18. CC to provide a clear list of pre-requisite skills for resource free exams.</p>
<ul style="list-style-type: none"> • <i>Potential use of scientific calculators in resource free exams.</i> 	<p>19. No use of any calculators (scientific, graphic, CAS, standard) in resource free section of the exam.</p>
<ul style="list-style-type: none"> • <i>Availability of a text book – time, photocopying, cost of making it available (cost to pass on), diversity of texts, Ability to copy more than 10% of books</i> 	<p>20. A range of textbooks needs to be available by end of term 2 2008.</p>
<ul style="list-style-type: none"> • <i>Need sample assessments in sufficient time to prepare.</i> 	<p>21. Sample tests and at least 3 sample exams/answers provided that are purpose designed for each course. (July 2008)</p> <p>22. Provide a range of extended pieces of work/ investigations. (at least 1 per unit content topics)</p>
<ul style="list-style-type: none"> • <i>PD on new courses</i> 	<p>23. Need more booklets similar to those provided in 1992 course change. These booklets to focus on new course content eg mathematical reasoning, Leslie matrices. (How to teach,</p>

	<p>what to teach, depth of coverage)</p> <p>24. Resources being available on CD and/or internet.</p>
<ul style="list-style-type: none"> • <i>Availability of CAS calculator for teachers to test and learn.</i> 	<p>25. Teachers given information on how to access demonstration units of CAS calculators (especially regional schools). (term 4 2007)</p> <p>26. Funding subsidy provided for low socio economic schools to make purchase more affordable.</p>
<ul style="list-style-type: none"> • <i>Knowing which calculators to use.</i> 	<p>27. Curriculum Council to provide a list of pros and cons of each CAS calculator brands and models. (end term 1 2008)</p>
<p>Professional Development</p>	
<ul style="list-style-type: none"> • <i>PD on new courses to emphasise new content, CAS and sample exams.</i> 	<p>28. Specific PD to discuss sample exams. (end term 3 2008)</p>
<ul style="list-style-type: none"> • <i>Not enough calculus teachers to teach the higher level of calculus. Not enough teacher training on high level math</i> 	<p>29. Fully funded face to face special PD's and booklets to enhance understanding of teaching calculus.</p>
<p>Other</p>	
<ul style="list-style-type: none"> • <i>Implementation readiness is linked to teachers ability to adopt the course and the use of CAS calculators.</i> 	<p>30. All previous guidelines must be met to allow joint implementation of the course and CAS calculators in 2009. If concurrent implementation is not possible the course should be delayed.</p>

No submission authors were called.

Mr David Wood, Chief Executive Officer of the Curriculum Council, addressed the jurors and answered questions from the jury.

All jurors and the facilitator signed that they had read and agreed that this report on the outcomes of the Maths Specialist course jury is a true and faithful transcript of the jury discussion and recommendations.

JURY SESSION EVALUATION

COURSE:
DATE:
FACILITATOR:

YOUR FEEDBACK, PLEASE

Please tick the responses which best match your view:

Objective 1 - Provided an appropriate amount of information to meet my needs:

- Not enough Slight Just right More than enough Too much

Objective 2 - Provided an appropriate depth and detail of information to meet my needs at this stage:

- Not at all Slightly A fair amount Mostly Completely Too much

Objective 3 - Provided me adequate opportunity to contribute my views to the decisions made:

- Not at all Slightly Reasonably Mostly Completely

Objective 4 - Provided an appropriately secure environment for the Jury process

- Not at all Slightly A fair amount Mostly Completely

During the jury session:

We discussed all issues that I consider relevant:

- Not at all Slightly Reasonably Mostly Completely

We achieved our goals

- Not at all Slightly Reasonably Mostly Completely

The time management was paced appropriately to my needs:

- Not at all Slightly Reasonably Mostly Completely

One thing that could be done to improve this Jury is:

The best thing about this Jury was:

The worst thing about this Jury was:

Comments:

I have questions about today's Jury.

Please contact me (name)

on (phone/email)

Appendix 4: Summary Results of the Mathematics Jury Evaluation

ROUND B TEACHER JURY EVALUATION SUMMARY MATHMATICS Tuesday 20 November 2007

The responses of the 30 in this group are reported here and are generally very positive. Although less than the necessary 45 for the data to have statistical significance, this report does provide insight into the views of the participants and the results are valid on that level. Once data is extrapolated across all juries, the statistical validity of aggregated data will be established.

This Teacher Jury (30 Respondents):

PROMPT	NOT ENOUGH	SLIGHTLY	JUST RIGHT	MORE THAN ENOUGH	TOO MUCH
1. Provided an appropriate <u>amount</u> of information to meet my needs:	2	2	10	15	1

2. Provided an appropriate depth and detail of information to meet my needs:	NOT AT ALL	SLIGHTLY	A FAIR AMOUNT	MOSTLY	COMPLETELY	TOO MUCH
	0	2	3	14	11	0

3. Provided me adequate opportunity to <u>contribute my views</u> to the decisions made:	NOT AT ALL	SLIGHTLY	REASONABLY	MOSTLY	COMPLETELY
	0	2	3	12	13
4. Provided me an <u>appropriately secure environment</u> for the jury process:	NOT AT ALL	SLIGHTLY	FAIR AMOUNT	MOSTLY	COMPLETELY
	0	0	1	5	24

We:

5. We discussed all issues that I consider relevant	NOT AT ALL	SLIGHTLY	REASONABLY	MOSTLY	COMPLETELY
	0	1	5	15	9
6. Achieved our goals	NOT AT ALL	SLIGHTLY	REASONABLY	MOSTLY	COMPLETELY
	0	1	12	10	7

Time management of this Jury was:

7. Time management was paced appropriately to my needs	NOT AT ALL	SLIGHTLY	REASONABLY	MOSTLY	COMPLETELY
	2	5	9	10	4

ROUND B TEACHER JURY MATHEMATICS EVALUATION SUMMARY (Continued)

As well, the respondents offered qualitative information as follows:

The one thing that could be done to improve this Jury is...:(19 responses):

1. More time when issues and recommendations are raised. It was too rushed
2. More time on small tables, less debate as big group – waste of time
3. Watching time
4. Ask jurors to submit their views on the major question beforehand and share them with other jurors beforehand
5. Provide facilitators who are more familiar with the content
6. Reduce the amount of jurors present, or reduce the amount of material to make recommendations on
7. More time to get the Report right grammatically and in format
8. Not let a few people dominate most of the discussion
9. Country teachers should have 2 nights accommodation and 2 days relief-supplied
10. Prior to the jury give headings for recommendations to guide our questions.
11. More time to discuss
12. Limit speakers “floor time” eg. 3 minute limit
13. To allocate more time to go
14. 2 days not long enough (1 day Round 1, 1 day Round 2)
15. Clear details on what could be recommended and what was already set eg. text book not CC problem! Scope of CC be made very clear to jury members.
16. Time pressure
17. Needed two days to work the issues – very rushed (worked lunch etc)
18. Given such an important decision to be made another day at least was required
19. More time needed to achieve debate on the details. Smaller group necessary

Further qualitative statements from respondents include:

The best thing about this Jury was... (28 responses):

1. Ability to speak on behalf of submission writers – just 10 voices out of 1000's created huge responsibility to voice opinion of others
2. Having teacher input in decision making process
3. Don't agree that an expression from the group relating to concerns about the CAS calculator needed to be removed when an overall majority of teachers agreed with it. Issue was cut-off by the facilitator rather than be debated or discussed by the group
4. Integrity was good
5. Excellent facilitation & interaction
6. Diverse views from wide range of teaching backgrounds
7. Democratic process involved
8. Excellent facilitators, especially in keeping us focussed on the task
9. Fair and open forum for discussion to take place
10. Being able to participate in the jury process. Interacting with like minded teachers
11. The raising of key issues and the ability to vote on these
12. The depth and breadth of experience of jury members
13. Openness to speak your mind
14. The discussions, voting and the entertainment
15. Open nature of the forum
16. Facilitators were very skilled; gave helpful guidelines; were clear-thinking
17. Consultative approach
18. Group discussion
19. The freedom to question the issues without fear
20. Open, secure environment
21. The chance to discuss and voice an opinion
22. Feeling as though I had a voice
23. Discussion with colleagues
24. Respect paid to use personally
25. Different to other stuff I've done
26. Organised well – professional. Facilitators were

The worst thing about this Jury was (21 responses):

1. Lack of specialists in each group. Rather than randomly selecting teachers, specialists from each stage should have been invited – maybe 20 for each stage instead of 10
2. Limited time
3. Getting bogged down on minor details
4. Time – a little rushed. Some people dominated discussion
5. Pressured time constraints
6. Opportunity for the loudest people to dominate
7. Some jurors tend to get off the topic at hand
8. Jurors not being clear enough about the issues to recommend on
9. Sitting for so long. The process was extremely demanding – concentrating and integrating information – but enjoyable
10. Some jurors dominating the discussion and without being sexist on our table it was 3 women who were making 90% of the commentary
11. Time constraints
12. Felt rushed on the day
13. Time – although the day was exhausting – we always felt rushed
14. Not getting the point
15. Certain people dominating the floor with irrelevant/personal issues
16. Not having enough time
17. Certain people at the table railroaded the group
18. Being rushed as time was limited
19. Very rushed timeline
20. Not enough time to discuss issues fully in depth
21. The stage 2 table – they were not experienced with the knowledge of mathematics

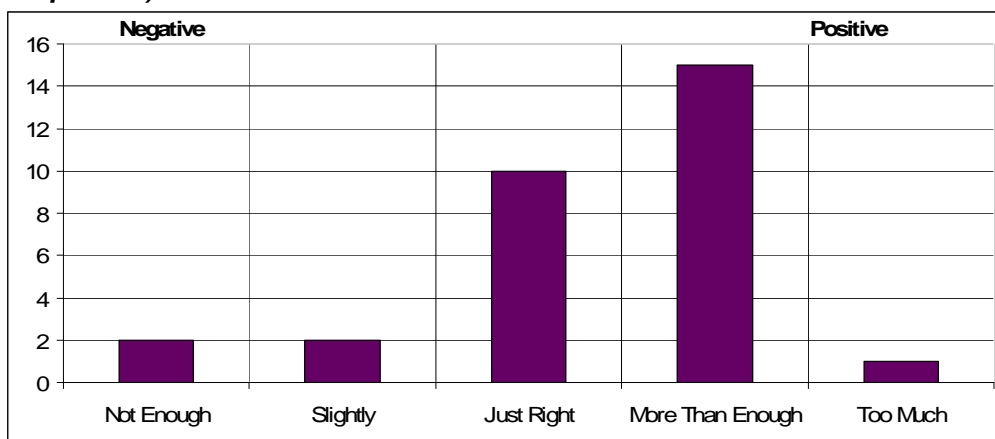
<p>marvellous</p> <p>27. A meeting of minds to discuss what is important to us – the moulding/structuring of a cohesive course</p> <p>28. The stage 3 table they had. Expertise and knowledge and experience</p>	
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Other Comments: (12 responses):

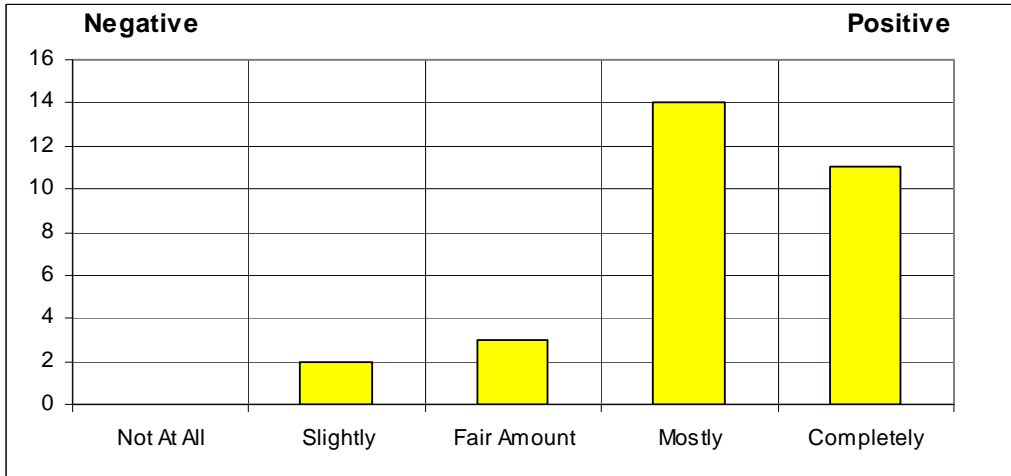
1. Teachers would like to thank you and the CC for recognising that teachers would very much appreciate the consultation process & that such consultation with teachers would be valuable. Throughout the jury process Christina Gillgren has championed the opportunity of teachers to have a say & not just be resigned to the fact that all decisions be made from 'on high', and the CC has pledged to take a more consultative approach. In the light of this, teachers find it perplexing that they were not consulted regarding CAS calculators. We are not 'dinosaurs' who are resisting the introduction of new technology but we are not all convinced that the correct decision has been made re the timing of the introduction of CAS calculators. Teachers do not know what informed the CC decision & we do not know if & to what degree CAS will enhance mathematics education to a degree to which GC's don't (for students below tertiary level). It is not a good argument that we should introduce CAS calculators when the new courses are being introduced to avoid making changes later. We are teaching courses not how to use calculators. The use of CAS may enrich our teaching, but that will be an enrichment that can be added when the new courses have been trialled & 'bedded down'. We need to ask if any extra benefits, above these offered by graphics calculators, will be worth the extra time spent by students in becoming familiar with the new technology.
2. A worthwhile process.
3. Overall an interesting process.
4. Overall a very worthwhile experience which should become a more regular occurrence when making decisions on delivery of any courses.
5. As a country person, lovely to be looked after so well. This has never happened to me before in 35 years of teaching, except for CMIS at Nannup last year.
6. Constructive day where everyone was able to speak their mind.
7. Very pleased to be part of the process.
8. Worthwhile process.
9. Greater democratic process at table.
10. Very helpful facilitator.
11. The issue of the push for National Curriculum and what other states are doing. One jury member from overseas stated "WA laughing stock". I am very happy we are making a serious attempt to redress this perception.
12. Pleased to be informed at this level and able to contribute – you need to listen to your teachers! If we don't have a text then our hands are tied – ie we can't teach the course!

Graphical representation of the tables from page 31 follow:

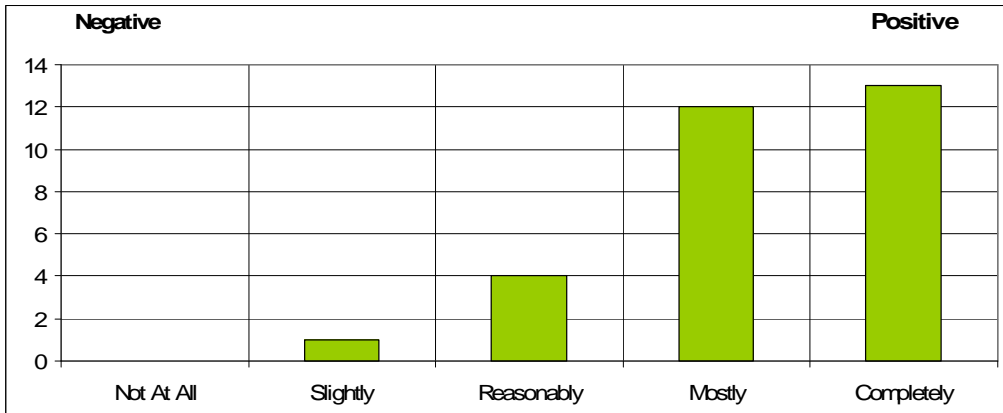
1. The Jury provided an appropriate amount of information to meet my needs: (30 Responses):



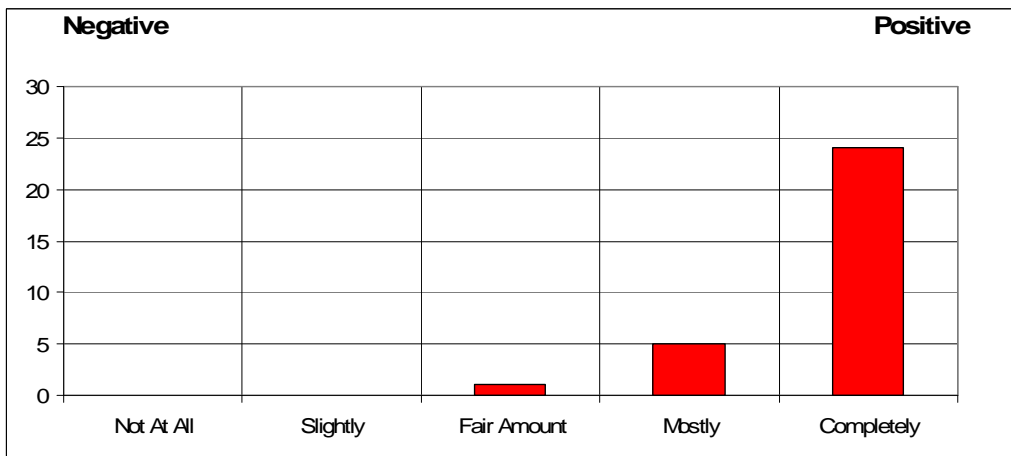
2. The Jury provided me an appropriate depth and detail of information to meet my needs:



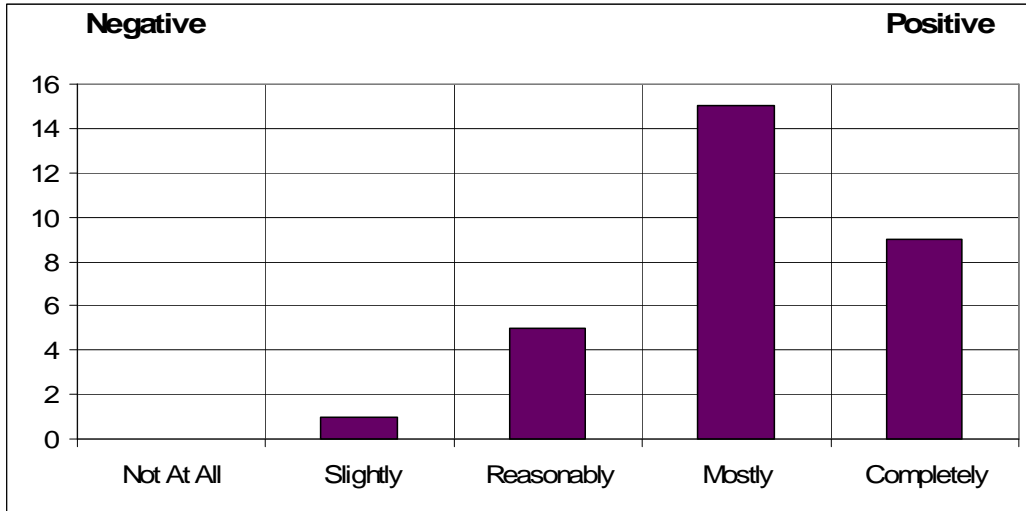
3. The Jury provided me adequate opportunity to contribute my views to the decisions made:



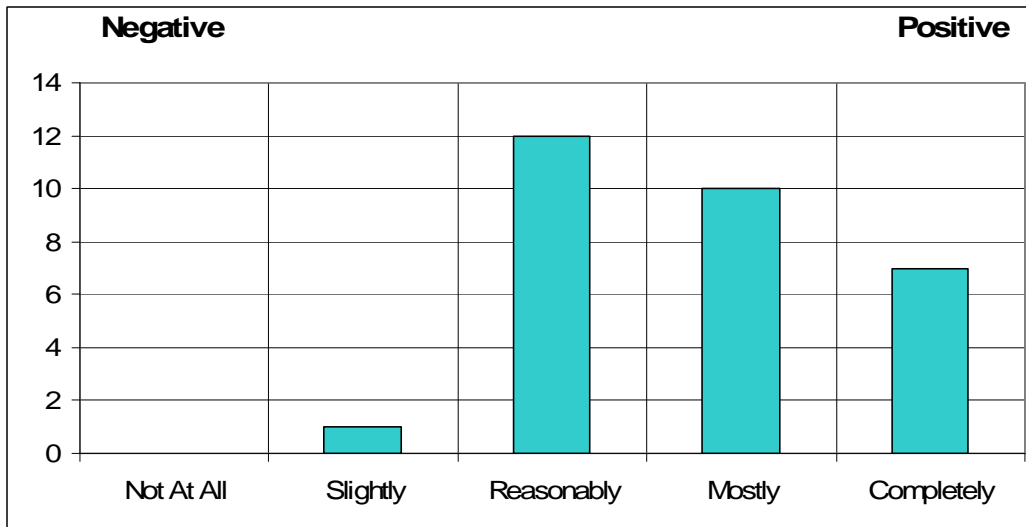
4. The Jury provided an adequately secure environment for the Jury process:



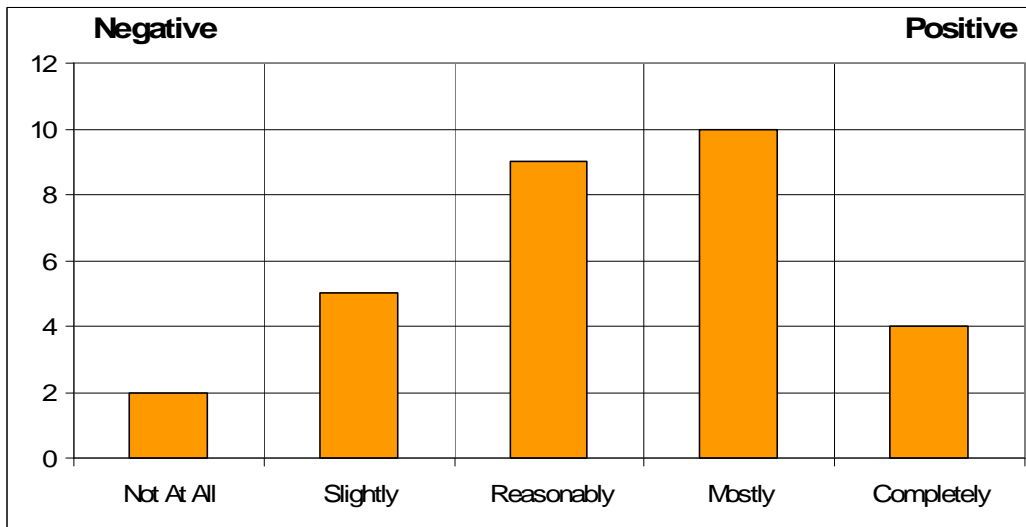
5. We discussed all issues that I consider relevant:



6. We achieved our goals:



7. Time management was paced appropriately to my needs:



Appendix 5: Summary Results of the Mathematics Specialist Jury Evaluation

**ROUND B TEACHER JURY EVALUATION SUMMARY
MATHMATICS: SPECIALIST
Wednesday 21 November 2007**

The responses of the 9 in this group are reported here and are generally very positive. Although less than the necessary 45 for the data to have statistical significance, this report does provide insight into the views of the participants and the results are valid on that level. Once data is extrapolated across all juries, the statistical validity of aggregated data will be established.

This Teacher Jury (9 Respondents):

PROMPT	NOT ENOUGH	SLIGHTLY	JUST RIGHT	MORE THAN ENOUGH	TOO MUCH
1. Provided an appropriate amount of information to meet my needs:	0	0	5	4	0

2. Provided an appropriate depth and detail of information to meet my needs:	NOT AT ALL	SLIGHTLY	A FAIR AMOUNT	MOSTLY	COMPLETELY	TOO MUCH
	0	0	0	3	6	0

3. Provided me adequate opportunity to contribute my views to the decisions made:	NOT AT ALL	SLIGHTLY	REASONABLY	MOSTLY	COMPLETELY
	0	0	1	2	6

4. Provided me an appropriately secure environment for the jury process:	NOT AT ALL	SLIGHTLY	FAIR AMOUNT	MOSTLY	COMPLETELY
	0	0	0	2	7

We:

5. We discussed all issues that I consider relevant	NOT AT ALL	SLIGHTLY	REASONABLY	MOSTLY	COMPLETELY
	0	0	0	4	5

6. Achieved our goals	NOT AT ALL	SLIGHTLY	REASONABLY	MOSTLY	COMPLETELY
	0	0	0	4	5

Time management of this Jury was:

7. Time management was paced appropriately to my needs	NOT AT ALL	SLIGHTLY	REASONABLY	MOSTLY	COMPLETELY
	0	0	1	2	6

As well, the respondents offered qualitative information as follows:

The one thing that could be done to improve this Jury is...:(1 response):

1. Increase time by approx 1 hour.

**ROUND B TEACHER JURY MATHEMATICS: SPECIALIST EVALUATION SUMMARY
(Continued)**

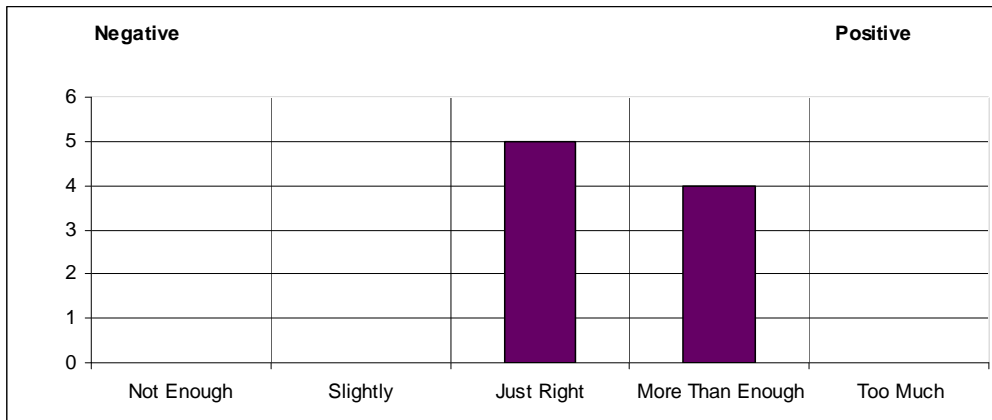
Further qualitative statements from respondents include:

<p>The <u>best</u> thing about this Jury was... 4 responses):</p> <ol style="list-style-type: none"> 1. Achieved a great deal in 4 hours. 2. Ability to contribute all views and work collaboratively. 3. A chance to be heard on important issues. 4. Small group – able to discuss views. 	<p>The <u>worst</u> thing about this Jury was... 1 response):</p> <ol style="list-style-type: none"> 1. Felt a bit rushed.
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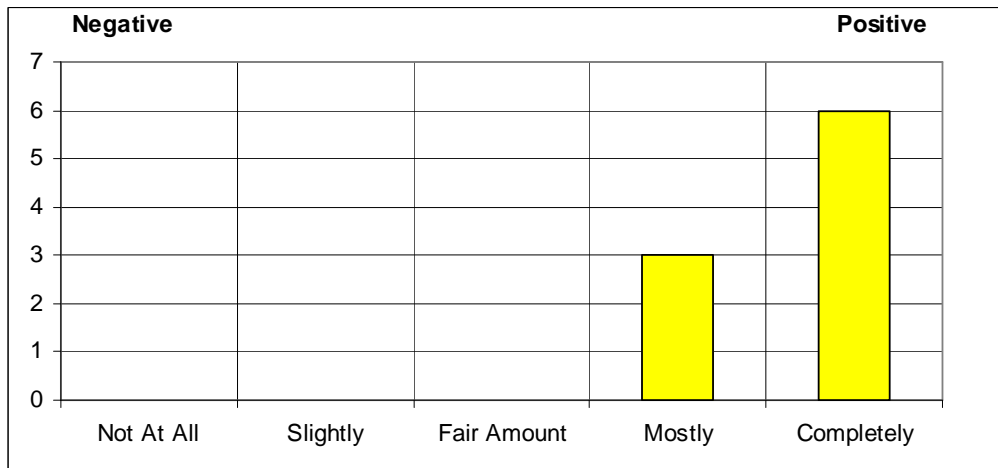
<p>Other Comments: (3 responses):</p> <ol style="list-style-type: none"> 1. Felt quite positive about the whole process. 2. Well ran. Productive and moving forward. 3. Excellent.
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GRAPHICAL REPRESENTATION OF THE TABLES FROM PAGE 36 FOLLOW:

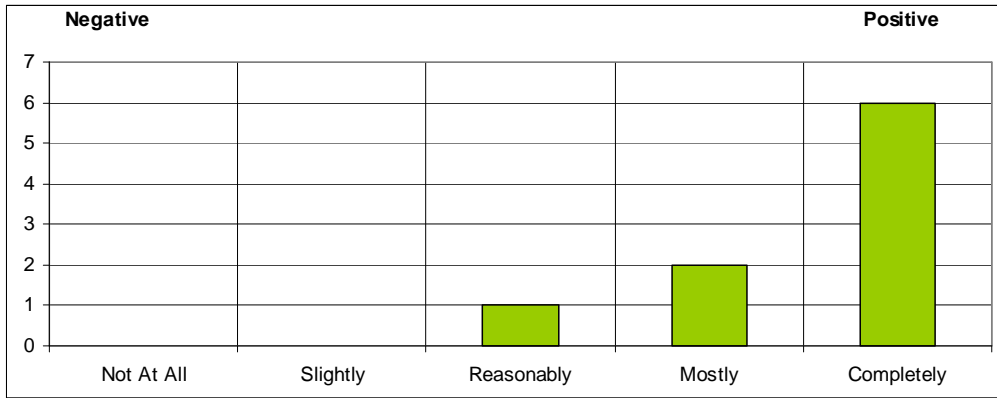
1. The Jury provided an appropriate amount of information to meet my needs: (9 Responses):



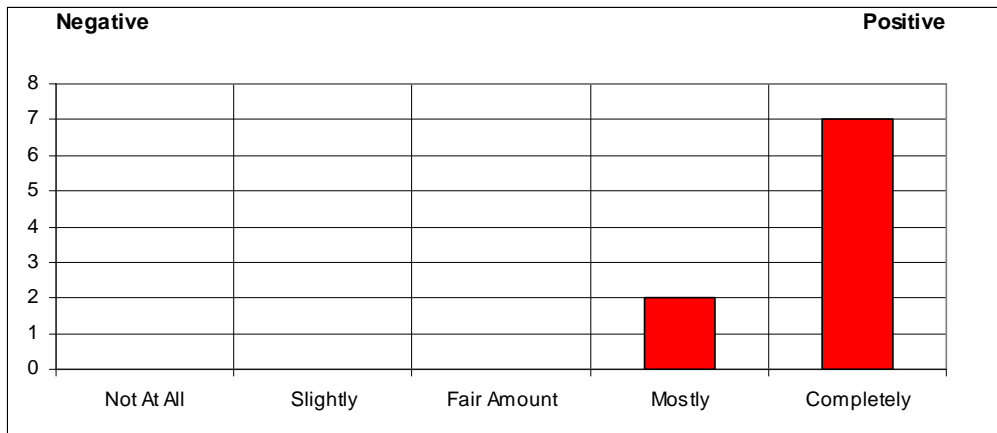
2. The Jury provided me an appropriate depth and detail of information to meet my needs:



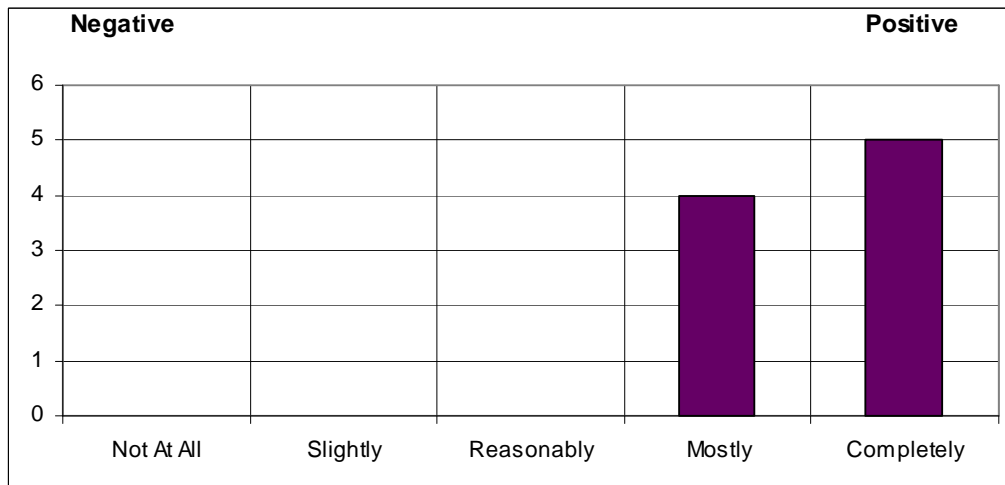
3. The Jury provided me adequate opportunity to contribute my views to the decisions made:



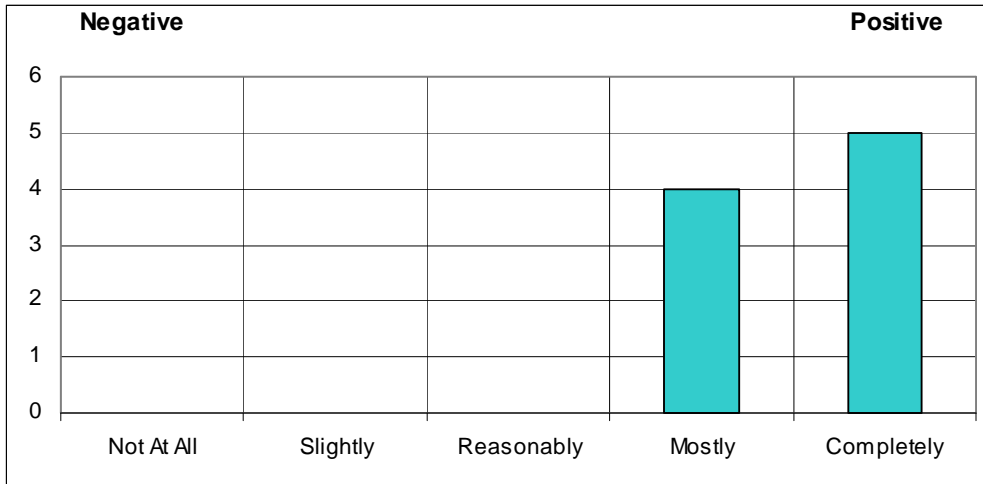
4. The Jury provided an adequately secure environment for the Jury process:



5. We discussed all issues that I consider relevant:



6. We achieved our goals:



7. Time management was paced appropriately to my needs:

