

**14-19 Curriculum and
Qualification Reform:
Grasping the Opportunities**

A CEG SEMINAR

SALTERS' HALL

Wednesday, 17 November 2004

14-19 CURRICULUM AND QUALIFICATIONS REFORM - GRASPING THE OPPORTUNITIES

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Aim

To consider the proposals in the Tomlinson report:

“14 – 19 Curriculum and Qualifications Reform”

and to explore the possibilities which these proposals offer for Chemistry in schools, colleges, universities and industry.

The outcomes will be a set of recommendations for CEG members for action that could be taken to:

- i) Increase awareness and understanding of the recommendations
- ii) Develop strategies for making the most of the changes to come

Background

Only thirty years ago, in the early 1970s, before the school leaving age was raised from fifteen to sixteen more than two thirds of all students left school at fifteen without a single examination qualification to their name. Those remaining studied for O and A levels, which were viewed as being well enough suited as preparation for employment or higher education.

By the 1980s most students stayed in school until they were sixteen, studying for O levels or CSEs, although those staying on beyond sixteen did not increase to more than some twenty percent of the cohort. Through the 1990s more students chose to stay on into the sixth form for a variety of reasons, although over half still left school for some form of employment or study in a College of Further Education. Thus by the beginning of the 21st century we had an examination system coping, but with difficulty, with some half a million candidates taking eight or more GCSEs, together with a three fold increase in numbers studying at A level.

On several occasions proposals have been put forward to revise the examination system, but the only outcome has been the merging of O level with CSE. The recent replacement of A levels with AS and A2 in modular form has produced a serious overload arising from formal assessment at the end of every module. In many subjects about a fifth of teaching time is now devoted to revision and examinations.

Pressure on the education system is also growing from end-users such as employers and Higher Education. The CBI has voiced real concern about the limited skills in both literacy and numeracy possessed by many school leavers. On the other hand university admissions tutors, who traditionally have used the A level examinations to identify the more able candidates, are finding this increasingly difficult, due to growing numbers who achieve the highest grades.

In addressing these issues the Government published a Green paper in 2003. Subsequent consultation produced the view that there is a need to create a clearer and more appropriate curriculum and qualifications framework for the 14 – 19 phase. A framework which develops and stretches all young people to achieve their full potential, and prepares them for life in the 21st century. Last year a Working Group on 14 - 19 curriculum and qualifications reform was set up under the chairmanship of Mike Tomlinson. The group was asked to examine how developments in vocational education, assessment and the qualifications framework could contribute to the successful and lasting transformation of 14 – 19 learning.

The previous Secretary of State welcomed this report in a statement to the House of Commons on the 18 October, promised to consider the report carefully and to make proposals in a White paper in the New Year. There are five tests to be made, set when the Working Group's interim report was published. These include public confidence in the system, rigorous assessment and public accountability.

Grasping the opportunities

The Chemical Education Group (CEG) convenes a seminar annually to explore a current issue in chemical education. The work of the reform group points towards opportunities to support and develop the teaching and learning of chemistry by 14 – 19 year old students. The CEG is better placed than most to draw on the expertise in schools, colleges, FE, HE and the chemical and pharmaceutical industries to identify ways forward.

The Final Report of the Working Group on 14-19 Reform

In setting the scene for the seminar Mike Tomlinson began by outlining why reform is needed and indicating aspects which need to be addressed.

The proposals build on existing strengths while addressing its weaknesses in order to:

- Raise participation and achievement – by tackling the educational causes of disengagement and underachievement
- Get the basics right – ensuring that young people achieve specified levels in functional mathematics, literacy and communication and ICT, and are equipped with the knowledge, skills and attributes needed to succeed in adult life, further learning and employment
- Strengthen vocational routes – improving the quality and status of vocational programmes and identifying a clear role for employers
- Provide greater strength and challenge – ensuring opportunities for greater breadth and depth of learning
- Reduce the assessment burden for learners, teachers, institutions and the system as a whole by reducing the number of times learners are examined
- Make the system more transparent and easier to understand – by rationalising 14-19 curriculum and qualifications within a diploma framework, where progression routes and the value of qualifications are clear

The Proposals

Mike Tomlinson then turned to the proposals which the Working Group have made to address all the issues outlined above. These are:

- A common format for all learning programmes unified through a framework of four diplomas

- This framework to be understood and valued by employers and HE
- Core and main learning together with an extended project
- Advice and guidance for students regarding appropriate pathways
- Shift of the balance from external towards internal assessment by more teacher assessment
- A wider range of achievements recognized
- Stretching the more able through, for example including components of HE courses
- Implemented over a ten year period under the leadership of an external advisory board

It was stressed that the current requirements of the National Curriculum in which science remains a core subject, studied by all students up to the age of sixteen will not change under these proposals

Response from the Audience

- The process of change must include teachers at its core, as they are the ones who will have to make it work
- The proposals must be accepted or rejected as a whole, cherry picking parts will not do
- The assessment system must be seen as credible
- Industry and much of HE is unaware or unclear about the nature of the proposed changes. There is a real need for effective communications.
- If time is genuinely to be released by simplifying assessment can it be used to achieve better practical skills

Group Discussions

Participants attending this seminar were arranged into six groups, each including representatives of the constituent groups of teachers, lecturers and industrialists. To help facilitate discussion four questions were posed, with two selected as the initial focus for each group. A summary of these discussions follows.

How will the proposals affect teachers?

The increasing focus on individual learning will necessitate teachers thinking collaboratively, and engaging in broad consortia to offer the full range of opportunities envisaged in the report.

There are significant professional development implications for teachers in contributing to the development of a new system. This is not necessarily negative, providing that effective and accessible training is offered.

Teaching resources and guidance will need to be developed to support change, for example in setting out how the Advanced Level “higher order thinking” could be delivered. Concern was expressed that some valued teachers who are near the end of their careers may leave the profession early, to avoid facing further changes. It would be helpful if as many teachers as possible are drawn into the process to encourage a feeling of ownership. A further aspect of this surrounds the preparation and publication of new books and websites.

It is important to reflect on current pilot exercises such as 21st Century Science and to offer re-assurance to teachers that the new proposals will embrace their work.

There needs to be a clear, practical balance between internal and external assessment. It will be important to build the trust of teachers so that they can feel that they have been consulted, and are persuaded of the reasons for the move forward.

Currently there is seldom enough time for teachers to address important additional areas such as careers or visits. Students like opportunities to debate and to explore ethical issues more widely. The proposals were welcomed in recognising and emphasising these approaches.

How will the proposals affect vocational approaches?

These were greeted favourably, however there were also concerns about the ability of the current system to provide appropriate resources, experienced staff and work placements to deliver high quality vocational courses which would be valued by all.

Involvement by industry in course design, assessment, validation and in quality careers guidance to create ownership is vital if the vocational elements are to be credible.

An examination board representative felt that the proposed vocational elements would be more acceptable to consumers than current offerings.

On the other hand, there is widespread ignorance from those not in the school system about the meaning of the term “vocational education”, one describing it as plastering and plumbing.

How will the role of admissions tutors become easier?

The lack of differentiation between A grade students is a real problem for oversubscribed universities. If the assessment in schools is to become broader, and led by teachers can the universities be persuaded to accept them. Even students currently studying for A* qualifications lack the skills for individual research, time management and the ability to evaluate and develop an argued discussion. The extended project may become a strong point in the admissions process if it addresses all of these.

It will be important that university staff can know and understand exactly what each student has achieved through the clarity of the transcript of qualifications each student holds.

Discussions between teachers and those involved with admissions should be positively encouraged as part of the new approach. The new system generally looks more complicated, but is based on valid reasons, and has been given sufficient time to bed in.

Will the transition from school or college to HE and the world of work be facilitated?

It was felt important that there is clear progression from primary, to secondary, to FE and HE and into work and that there is challenge to avoid simply re-doing material that students have already covered.

There is currently too much spoon-feeding in teaching which is constrained by attainment performance and league tables, so that students entering HE often have poor time management and work organisational skills. These proposals will facilitate the transition by

loosening the curriculum to create a freer timetable for critical thinking, creativity and presentational skills. It should also be particularly important for developing practical skills, which are currently not good.

To ensure success HE needs to be directly involved in specialised course design.

Newly qualified graduates are often reluctant to admit that they “do not know” when placed in a new situation where they have to make a judgement when there is no obvious “right answer.”

Summary

There was recognition by many present that deficiencies in the current system need to be addressed. There was general agreement that these proposals would make a real difference, although there were some who would prefer to carry on as we are. It seemed to some that industrialists were more concerned about changes needed in the educational system than were the educationalists.

There must be effective “marketing” of the new systems with clear communication of the main features to encourage teachers, lecturers, industrialists and the public to welcome these changes.

The need to work together across current boundaries to develop these proposals was recognised in most groups.

There will have to be an effective management system to ensure that all the changes are properly supported during their implementation.

Conclusion

It would be helpful if the CEG Member Associations and Societies could use members present at this seminar and others to explore what more they could contribute. This should include promoting a good level of awareness and understanding of these changes. They could help to guide any further response to Government decisions on implementing the proposals set out by the Working Group in their report.

They could further contribute to the development of a framework for a “line of learning” containing work experience, study and complementary careers advice which supports a better understanding of chemistry today. These might well include concepts for functional mathematics, functional literacy and communication and ICT set in scientific contexts.

A bank of tasks set in the world of chemistry, which formed the beginnings of extended projects would be extraordinarily useful if supported by opportunities to take them further in university or industrial research laboratories.

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