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Physics 'could die out in state schools' due to lack of teachers

By John Clare, Education Editor

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Physics is in danger of dying out in most state schools within a decade because of a shortage of qualified teachers and a perception that the subject is difficult, a study published yesterday found.

Over the past 15 years, the numbers taking physics at A-level had fallen by 38 per cent, chiefly because most of those teaching it did not know enough to instruct, let alone enthuse, their pupils.

"It is one of the most striking and disturbing trends in education," said Prof Alan Smithers and Dr Pamela Robinson of Buckingham University, who carried out the study.

advertisement "We may be in danger of sleepwalking into the loss of one of the great branches of knowledge from our schools.

"If physics is to survive, both as essential education and a platform for higher level study and research, there is a need for urgent action."

They found that half those teaching physics had not studied the subject beyond A-level. Those who had were concentrated in grammar and independent schools, which produced the largest numbers of A-level entrants and achieved the best results.

Of those teaching physics up to GCSE - where the subject has been largely subsumed into "combined science" - more than a third had not studied it beyond GCSE. "Pupil performance at GCSE and A-level varies across institutions in parallel with teacher qualifications," the report said.

One teacher involved with the study said: "Non-specialists convey the impression that the subject is difficult because of their own unfamiliarity with it. This instils prejudice and creates problems that can often not be rectified later."

Pupils who studied physics as a separate subject at GCSE were far more likely to take it at A-level than those who studied combined science.

But while 78 per cent of independent schools offered GCSE physics, only 20 per cent of comprehensives did so.

Typically, physics teachers were male and ageing. They were being replaced by biologists, who were young and female and did not know enough about the subject to secure its future.

The study predicted that without adequate replacements the subject could disappear from comprehensive schools - where 80 per cent of pupils are taught - within 10 years.

Lord May, president of the Royal Society, said: "The Government needs to wake up to the problems facing science education." The Department for Education said that it was "doing huge amounts" to reverse the trend, including offering trainee physics teachers up to £14,000 in bursaries and "golden hellos".

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