Solutions

Marking: **M1** a correct method, **A1** the correct answer, **B1** an independent mark.

Each answer shows the steps, then the **result**.

2.1

that changing one variable leads to a change in the other, with other variables controlled, e.g. a randomized experiment

3.1

(a) any one, explained: the classes were not randomly allocated, so they may differ in teacher, reading level or interest; so the drop after the rewards cannot be clearly linked to the rewards; or the means are close to their standard deviations, so the difference may be due to chance

(b) award up to [6]: a weak negative correlation, $r = -0.21$; students who study more for rewards tend to report a little less enjoyment; a large sample (1,200), so the link is likely real but small; self-report on both variables: social desirability or mood may affect answers; correlation: students who already dislike learning may turn to rewards, so no direction of cause; conclusion: weak support for a link between rewards and lower intrinsic motivation, not for cause

(c) award up to [6]: triangulation: add student interviews or observations of reading, to check the teachers' themes; a second researcher codes the transcripts independently; check the themes with the teachers (member checking); interview teachers from several cities and school types, and describe the settings in detail for transferability

(d) Mark with the markbands: [13-15] all sources used and weighed (strength and direction), concepts used to judge them, a reasoned judgement on the claim; [10-12] most sources weighed, some judgement; [7-9] sources described with some evaluation; [4-6] sources summarized in turn; [1-3] little relevant. Points that may be included: Source A (experiment, random allocation) gives the strongest evidence that an expected reward can lower later interest, but with preschool children and drawing; Source B: during rewards reading rose (6.2 against 3.5 books), after rewards it fell to 2.9, below the comparison class (3.4), which fits the claim; but non-random classes and a small difference relative to the spread weaken it; Source C: a weak negative link in a large sample; correlational and self-report; Source D: teachers see both effects: rewards can start a habit for weak readers, but shift attention to the reward; credibility limited: 8 teachers, one city, teachers' views not students' behaviour; the sources suggest the effect depends on who is rewarded and whether they already enjoy the activity (self-determination theory); judgement: the claim is partly supported for students who already enjoy learning and for expected, tangible rewards; it is not shown for all students or all rewards

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