

(N = 2123). Data are first analysed separately within country batches,
and then combined with Country as a variable. Primary-Secondary
differences are noted, and trends are analysed with regard to
variations in School Year. Particular attention is given to apparent
Sex differences in learning preferences.

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Until recent years, cooperativeness as a human characteristic has been

seen as the relative absence of competitiveness. In other words,
competitiveness, in the sense of striving for superiority, has been
seen historically as the fundamental force in the way human beings
behave toward each other. Parallels have been drawn with animal
behaviour, particularly since the end of the last century. Other kinds
of social behaviour, e.g., altruism and individualism, have then been
conceptualised and described by the way in which they fit with the
assumption that humans are basically competitive animals. Even more
important, any inclination to cooperate helpfully with others has been
defined as a lack, even a weakness, in the "natural" human orientation
toward competitiveness. In other words, the more cooperative a person
then the less competitive that person. This is now known colloquially
as "old theory", indicating that it is dated, rather old-fashioned, and
contradicted by recent evidence. As "old theory" would have it, a
student in a classroom could be disposed to cooperation or to
competition in learning, but not to both since they are antithetical.

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It was an anthropologist, Margaret Mead, who popularised notable
resistance to "old theory", the idea that cooperation and competition
are mutually exclusive. Recent explanations by social psychologists
of the ways in which humans behave toward each other, noting that a

A person's attitudes and inclinations to compete and cooperate need not be in mutual disagreement, comprise "new theory". In this more recent conception, cooperativeness is independent of competitiveness rather than being its relative absence. A student, therefore, can favour cooperation and competition in classroom learning, or one of them, or neither.

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The independence of cooperative and competitive attitudes was suggested initially in a major study by Johnson and Ahlgren (1976). A later study included consideration of individualistic attitudes as well, i.e., a preference to work without reference to the work of others or even without much interaction with others (Johnson, Johnson, and Anderson, 1978). The Social Interdependence Scales (Johnson and Norem-Hebeisen, 1979) enabled the further collection of evidence about the independence of these attitudes, though these scales were rudimentary. The LPSS (LPSS) was developed for

A particular application to classroom learning over a range of primary and secondary school years (Owens and Straton, 1980). Research conducted over a number of years with large samples of Australian schoolchildren has been able to demonstrate conclusively that preferences for cooperative and competitive learning are basically uncorrelated, i.e., the attitudes seem independent of each other. In addition, the research has shown that preferences for cooperative and individualised learning are negatively correlated at a low level, i.e., as might be expected, a desire to work with others is unlikely to be associated with a desire to work alone. Finally, it has been shown that preferences for competitive and individualised learning are positively correlated at a low level, probably a reflection of pervasive classroom experience in which individualistic effort is frequently assessed in comparison with others (Owens and Barnes, 1992). In general, this evidence is strong support for "new theory", that a desire to cooperate is not a weak alternative to the urge to compete, and that a learner can be disposed to do both.

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Since its first use in 1978, the LPSS has been utilised in a series of studies both in Australian schools and overseas. The major findings from these studies are listed briefly below:

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1. In upper primary school and secondary school in Sydney and Perth, girls generally express greater preference for cooperative learning

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than boys, and boys favour competitive and individualised learning more

Äthan girls (Dutton, 1987; Owens, 1984; Owens, 1985a; Owens and Straton, Ä1980). This seems true in other western countries as well (Owens, ‡Ä1991; Owens, 1992).

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Ä2. In general, preferences for competitive learning increase markedly Äwith increasing year level both in Australia and overseas; preferences Äfor individualised learning decrease markedly in Sydney and Perth Äthough the evidence is uncertain in the overseas samples; and Äpreferences for cooperative learning increase in Sydney and Perth Äthough again the overseas data are inconsistent (Dutton, 1987; Owens, Ä1984; Owens, 1985a; Owens, 1991; Owens, 1992; Owens and Straton, 1980).

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Ä3. Preliminary information suggests that students in Sydney single-sex Äsecondary schools may be more strongly oriented to competitive and Äindividualised learning than students in coeducational secondary ‡Äschools (Dutton, 1987).

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Ä4. In Sydney secondary schools, students generally express stronger Äpreferences for cooperative learning in English than in Mathematics, Äthough boys prefer more competitive contact in learning Mathematics and Ägirls prefer more competitive contact in learning English (Owens and ‡ÄBarnes, 1982).

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Ä5. In active physical education lessons in Sydney schools, boys express Äpreferences for competitive and individualised activities and girls Äexpress a preference for cooperative activities (Dutton, 1987; Owens ‡Äand Dutton, 1987).

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Ä6. When Sydney and Perth students with high cooperative learning Äpreferences are compared with students with low cooperative learning Äpreferences, their perceptions of classroom atmosphere contrast Ämarkedly in primary classes and in secondary English classes, though Änot in secondary Mathematics classes (Owens, 1983b; Owens and Barnes, ‡Ä1982).

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Ä7. In a Sydney longitudinal study, both boys and girls state a stronger Äpreference for cooperative learning in the early years of secondary Äschool (Years 7 and 8) than they had done two years earlier in primary Äschool; in contrast, however, in Years 9 and 10, boys state a Äconsiderably stronger preference for competitive learning than they had Ädone in Years 7 and 8, while girls express a lesser preference for Äcompetitive learning than they had done earlier (Owens, 1984).

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Ä8. As assessed by repeated testing during a Sydney school year, Äpreference for cooperative learning remains stable, preference for Äcompetitive learning declines somewhat, and preference for ‡Äindividualised learning declines steadily (Owens, 1985b).

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Ä9. In inter-cultural investigations, Aboriginal schoolchildren express Äa very strong preference for cooperative learning in primary school

which seems to be maintained through the secondary school years while preferences for competitive and individualised learning decline markedly (Newbery, 1979; Wegener, 1986).

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†10. A comparison of the learning preferences of secondary students indicates that secondary schools in Sydney and in Perth seem markedly competitive-individualistic in contrast to the English Midlands and Minneapolis (Owens, 1991; Owens, 1992).

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Of particular interest for this paper is the cross-cultural study in which a number of comparisons are made between primary and secondary students in Sydney schools and in Minneapolis (USA) schools (Owens, 1985a). Trends in Sex and Year differences are noted. With regard to Country, significant differences emerge between Sydney and Minneapolis students. Overall, the Sydney students are significantly

less cooperatively inclined, and more competitively and individualistically inclined than their American counterparts. The intention in this paper is to broaden the range of cross-cultural comparisons by analysing responses from a large sample of students from secondary schools in the Midlands counties in England and from primary, intermediate, and secondary schools in New Zealand. Comparisons are made not only with the Sydney and Minneapolis findings but with findings from a sample of Perth primary and secondary students as well.

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The Australian (Sydney) sample of students (N=1796) for this study was drawn from one state high school and a neighbouring primary school in each of four separate suburbs in the western metropolitan area of Sydney. All schools were coeducational and comprehensive, and the students were drawn from areas of a broadly representative socioeconomic range with a relatively low non-English-speaking migrant population. Classes were selected from the final two primary Years 5 and 6, and secondary Years 7,9,10,11, and 12. Low-ability remedial classes in the high schools were excluded from the sample.

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The Australian (Perth) sample of students (N=1433) was drawn from one state high school in each of three separate suburbs, and five primary schools from varied locations. As with the Sydney sample, schools were coeducational, comprehensive, and represented a broad range of socioeconomic backgrounds. Classes were selected from the final primary Years 6 and 7, and all secondary levels, Year 8 through Year 12.

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The English (Midlands) sample of students (N=2123) was drawn from six medium to large coeducational, comprehensive government high schools, and from Year 12 in one senior (sixth form) college. The schools, with students of predominantly middle socioeconomic status, were located in

three Midlands counties. In two of the schools the number of Asian/Afro-Caribbean students reached 10%.

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The American (Minneapolis) sample of students (N = 968) was drawn from an elementary school (Years 5-6), a junior high school (Years 7-9), and a senior high school (Years 10-12) in each of two suburban school districts. Classes were selected to give a representative, though not random, sample, and remedial classes were excluded. Children from recognised minority groups did not form a large proportion of the school enrolments. Socioeconomic conditions in the feeder neighbourhoods varied considerably as judged by the school by school figures for students' entitlement to the free school lunch program.

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The New Zealand sample of students (N=2954) was drawn from the final year in eight primary schools (Standard 4), the first year in four intermediate schools (Form 1), and two years in six high schools (Forms 3,5) in the Central Region. The schools were situated in communities both in the North Island and the South Island. The levels were equated to Years 5,6,8, and 10 in Australian terms.

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Preferences for cooperative, competitive, and individualised learning modes were obtained by means of the Barnes-Owens-Straton Learning Preference Scale (Barnes, Owens, and Straton, 1978; Owens and Straton, 1980). There are 36 items, brief statements about a feature of learning by cooperating with others, by competing with others, or by working alone. Items referring to each of these learning modes are content-matched in 11

groups, and one additional group contains unmatched items. Each content group, therefore, contains three matched cooperative, competitive, and individualised items, and each preference subscale in the LPSS, therefore, is composed of 12 items. Students respond to each item by indicating how "true" or how "false" the statement is for them, a four-point answer scale is used, and numerical values are assigned to the answers on a 4-3-2-1 basis, with 4 representing the strongest preference. Three of the 12 items in each subscale are expressed in negative phrasing, and the scoring is reversed for these items. Three main subscale scores (minimum 12, maximum 48) are calculated for each student, indicating strength of preference for Cooperative, Competitive, and Individualised learning situations. In addition, two involvement indices are calculated. Combined Involvement is obtained by adding the Cooperative and Competitive subscale scores; this score

Äindicates desire for contact with others during the learning processes.
ÄCooperative Involvement is obtained by subtracting the Competitive
Äsubscale score from the Cooperative score; this score indicates the
Ärelative strength of the cooperative preference within the general
‡Ädesire for contact with others in learning.

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ÄThe version of the LPSS used in England and in New Zealand was
Äidentical to the Australian edition. The version used in Minneapolis
Äwas an "American Revision" in which six one-word alterations were made
Ä(e.g., "grades" substituted for "marks" in reference to assessment).
ÄThese changes were minor matters of idiom rather than major ones of
Äsubstance. A complete handbook including the LPSS and its two
Äcompanion scales for teachers and parents is now available (Owens and
ÄBarnes, 1992). Data from both England and the United States are
‡Äincluded.

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ÄThe student data were gathered in Sydney and in Perth personally by the
Äauthor and his associates in the research team. This testing was
Äcarried out in Term 1 of the school year as part of a much larger
Äresearch program that required repeated visits to the schools during
Äthe year. In England, the testing was done both by the researcher and
Äby cooperating school staff who had been briefed on the procedure.
ÄThis testing occurred late in the school year with no further visits
Äprojected. In Minneapolis the data were gathered directly by the
Äresearcher visiting schools in the middle of the school year.
ÄThe New Zealand data were gathered by members of the present
Äresearch team as part of a much larger project. Similar instructions
Äwere given in each testing location. The Australian data were gathered
Äten years ago, the New Zealand data in