

1962, 1964; Phenix, 1962). Several major texts were published by the mid 1960s, including King & Brownell's *The Curriculum and the Disciplines of Knowledge*. "Select what to teach from the disciplines" and "organize it through disciplinary designs" was the doctrine of the time. By 1963, the disciplines were canonised as the most logical curriculum design (Efland, 1988; Pinar, et al., 1996, pp. 168-177). Indeed, "disciplinary doctrine" and subjugation held that "the chief if not the sole criterion for including any subject in the school curriculum is whether that subject is recognised as an academic discipline" (Tanner & Tanner, 1989, p. 341). Although ID theorists claimed neutrality, ID was established in this context to basically work out the details for disciplinary designs on C&I. Some say ID was established at this time to teacher-proof the disciplinary curriculum.

Disciplinary doctrine was re-established amidst student protests and near anarchist reactions to the irrelevance of isolating disciplines and disintegrating knowledge in the 1960s in countries such as the United States. Bruner, Phenix and Schwab rethought their original ideas by the late 1960s. Bruner (1971, p. 19), called for a moratorium on disciplinary designs. Phenix retracted his ideas by concluding that disciplinary studies tend toward "a sense of academic irrelevance" (1969, p. 13). Schwab dismissed the "abstracted, idealised" nature of disciplinary knowledge and its foundation to bad "habits of the academic community" (1969, p. 225). These educators reiterated a profound alienation from the pervasive and often oppressive practices of this curriculum form. Out of this context, one curriculum theorist noted, "a new curriculum 'star' appeared on the educational horizon – the minicourse" (Oliver, 1978, p. 3).

The minicourse was not entirely revolutionary by 1960s standards, but it did provide an alternative curriculum form in the schools, if only for a decade or so. The academic notion that a course could be broken into discrete entities and lengths of two weeks, one week, or even one day was institutionalised at Purdue University in the mid to late 1960s. At Purdue, students in botany and zoology, for example, were provided with self-contained course packets and audiovisual materials to complete subtopics in cell mitosis and meiosis on their own time at any point in the term. Upon passing a range of these minicourses, the students were given credit for the full courses. Minicourses common to several courses were applicable to all of the courses. Purdue's minicourses followed a basic format of "modular teaching:"

1. Communication of objectives,

2. Presentation of content through readings and audiovisual materials,
3. Organisation of knowledge through practice (problem-solving, workbooks, etc.), and
4. Assessment by test. (Postlethwait, 1969; Postlethwait & Hurst, 1971, p. 18)

A practice of self-instruction already 50 years old, Purdue merely introduced an additional degree of flexibility to accommodate their students' lifestyles. This flexibility, with an increasing accessibility, built into the curriculum was based on the same liberalities of broadcast educational radio and television, and the Open University of the United Kingdom, which "opened its doors" in 1971 (Theodossin, 1980). "Modular teaching" and "free-form" education, the basic ID form and liberality of minicourses at Purdue and similar institutions, marked the form of Open University (OU) courses as well.

In the early 1970s, public schools in Canada and the United States embraced the liberality of minicourses (i.e., freedom of choice and sequence, local interests, and knowledge) but rejected their canned, disciplinary form. "Free-form" characterised minicourses in the school. As one minicourse advocate explained, the "free-form approach intends to offer students, faculty, and community members an opportunity to plan together and to participate in short explorations of areas that may be adjunct or actually outside the conventional program of studies." "Free-form courses are usually short, often intensive, investigations of a particular aspect of a subject area or brief overview of subject-matter outside the traditional curriculum" (Oliver, 1978, p. 22). Minicourses contradicted disciplinary doctrine by providing students and teachers with a form for exploring knowledge not contained by the disciplines. The curriculum form of minicourses was "free-form" – in theory, organic to the knowledge at hand. Minicourses were established well outside of disciplinary boundaries, and addressed "everything from fly-fishing to the philosophy of Karl Marx" (p. 5). Typical minicourse titles in schools surveyed in the mid 1970s included: "Are you a revolutionary or merely revolting?," "Backpacking," "Black history and culture," "Body talk," "Don't be stuck up anymore: Drug Therapy," "Economic survival," "Is God dead?," "literature of the occult," "R. Buckminster Fuller, or how to use your dome," "rock poetry," "Venereal disease," and "Women and liberation." By 1972, about one-third of the high schools and one-fifth of junior high schools in the United States were offering minicourses (Glathorn, 1975; Oliver, 1978, p. 33). One administrator commented on minicourses in her school, capturing the feelings of the times: "On

minicourse day attendance is up. No one is going to the bathroom or to drinking fountains. Maybe they are trying to tell us something” (Oliver, 1978, p. 126). Where disciplinary doctrine shaped a “teacher-proof curriculum,” free-form and minicourses wrought a “curriculum-proof teacher” (Romey, 1973).

Of course, free-form was no form as far as ID was concerned. ID theorists wanted to reign in minicourses and modular teaching by casting all of individualised curriculum into the form of instructional modules. The general liberality and psychology of modular teaching at Purdue and the OU – active student involvement, clear objectives, discrete units of knowledge, small, sequenced steps, self-pacing, flexibility, and portability– was pretty much the fruit of the previous decade’s work of programmed instruction in ID. By the 1970s, the individualised learning package or container for modular teaching was a module – “a self-contained, independent unit of a planned series of learning activities designed to help the student accomplish certain well-defined objectives” (Goldschmid & Goldschmid, 1972; Kapfer & Ovard, 1971, p. 2; Klingstedt, 1971, p. 73). Minicourses became modules for administrators looking to place some constraints on their school’s free-form curriculum. Modules were initially intended to be a form for the design of C&I by teachers, and intended to raise the bar of “design as you teach” or “redesign on the spot” lessons. However, under a “modular system,” ID provided teachers with pre-designed modules (Gagné & Briggs, 1974, pp. 33, 269-275). A module captured the sequenced steps of modular teaching in a discrete form (Burns, 1973; Hashim, 1999; Heinich, Molenda and Russell, 1985; Klingstedt, 1971; Russell, 1974):

1. Objectives
2. Pre-test
3. Rationale
4. Learning activities (Path through audiovisual or multimedia materials)
5. Post-test
6. Resources.

One student remarked on the modules in the mid 1970s: “You know I hate it, but I do several of these learning packages every day” (Glathorn, 1975, p. 96).

This form of ID essences and liberality has existed unchanged since the early 1970s, and like canned units, proliferated in commercial production during the 1980s and 1990s (Reed, 2001). In subject areas such as technology education, the popularity of modular teaching increased throughout the 1990s. Currently, in the United States, 72.5%