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Intensive mode teaching and learning refers to educational activities that occur on fewer days, and for longer each day, than a ‘traditional’ unit or module in the discipline. In traditional education, a full-time student studies between four and eight subjects or units per term or per semester at school, TAFE or university. Hence, each subject or unit is effectively part-time study, taking up between 10% and 25% of the study hours available in each week. By way of contrast, an intensive mode subject might take between 30% and 100% of the available study hours. Examples include field trips and study tours, during which students devote 100% of the available hours to a single subject.

In chemistry, the University of New England and Central Queensland University offer courses by distance education, but students are expected to attend compulsory residential schools. During these residential schools, the students participate in chemistry laboratories and tutorials, all day, every day for up to one week.

The success of intensive mode learning often depends on the ability of the instructor to identify threshold concepts and to provide scaffolding to avoid learning difficulties and misconceptions.

At school-age level, examples of intensive mode teaching and learning include vacation ‘camps’ and year 9 programs that provide opportunities for intensive off-campus, community-based learning experiences, which is a form of intensive mode learning within a formal school curriculum but outside the school campus.

Sally Male and her colleagues at the University of Western Australia, University of Tasmania and RMIT have surveyed academic staff involved in teaching 105 intensive mode units (subjects) at 26 Australian universities as part of an Australian Government Office for Learning and Teaching (OLT)-funded project on intensive mode teaching and learning. They found that reasons for intensive mode teaching and learning include fitting study between other activities, engaging in interactive learning activities over extended continuous periods, and focusing on one unit with limited distractions. They found that some advantages of intensive mode learning are social bonding within the learning cohort, focus and immersion in a discipline in a retreat-like environment, longer interactive activities of flexible duration, and continuity of learning – students can learn a concept, apply the concept and overcome challenges all on the same day. In many instances, intensive mode learning, such as weekend retreats, can better fit student life and course schedules, and free up time for other activities. Often there is a perception of better learning.

However, intensive mode teaching and learning can also have significant disadvantages. Male et al. found that disadvantages of intensive mode units include problems of timetabling and finding venues alongside regular units, students not understanding the workload, exhaustion for both teaching staff and students, students not managing studies and preparing for the next class, students finding it difficult to catch up if they had a mishap such as illness, difficulty in providing timely feedback, a perception that students do not engage in learning, difficulty in finding time for group work, and student anxiety.

The success of intensive mode learning often depends on the ability of the instructor to identify threshold concepts and to provide scaffolding to avoid learning difficulties and misconceptions. A threshold concept has several key characteristics. Threshold concepts are:

- **transformative**, in that, once understood, they cause a significant shift in the perception of a subject
- **probably irreversible**, in that once learned are unlikely to be forgotten
- **integrative**, exposing the previously hidden interrelatedness of something
- **troublesome** because they are key ideas that must be mastered before further learning can occur. For example, the idea that many substances consist of molecules, with a fixed combination of atoms, and are described by a formula is a threshold concept, which is fundamental to balancing equations, stoichiometry, the mole concept and many other concepts and skills.

Traditional teaching and learning has time and opportunity to seek additional explanation and clarification of threshold concepts between classes. In contrast, there is little or no time between classes in intensive mode. Hence, lessons need to carefully structured to maximise the mastery of threshold concepts at each step. In intensive mode learning, if there are significant difficulties in mastering a threshold concept, the resultant delay in learning means that the student might never catch up on subsequent concepts and hence not be able to complete the unit. While identifying and explicitly planning to clarify threshold concepts is absolutely critical in intensive mode learning, it is also good teaching practice in all modes of learning.

For more information about the OLT-funded project on intensive mode teaching and learning, please contact Dr Sally Male (sally.male@uwa.edu.au) or visit www.ecm.uwa.edu.au/staff/learning/research/intensive-mode-teaching.