
Design Develop Implement (DDI): an institution-wide learning design process



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1. Background

Developing or renewing university programs or units is often approached by academics as a bureaucratic task that involves the completion of numerous templates and forms and often in isolation from their colleagues (Moon, 2002). For example, it is common for a Program Director to decide on major or minor changes in the program while the rest of the program team only contributes their ideas at the unit level. This approach, while reflecting the practical realities of many institutions, has been questioned by scholars in the area of curriculum development (Raban, 2007). Most recent literature in the area calls for a team-based approach to university curriculum development that has the potential to provide dynamic and deliberative university programs (Dempster, Benfield & Francis, 2014; Gregory & Salmon, 2014; Voogt et al, 2011). It is imperative that academics work with other university teams, the community and industry to provide integrated and coherent programs. To address the aforementioned challenge, a team of Academic and Educational Developers from the Learning and Teaching Centre developed and piloted a process—the Design Develop Implement (DDI)—for program-level learning design. The DDI process is founded on such principles of collaborative professional learning and design thinking (Goodyear & Dimitriadis, 2013; Hokanson, & Gibbons, 2014).

The final report of the DDI Project was submitted to the Office of the PVC Learning and Teaching in February, 2015 with a strong recommendation for the DDI to be considered as a possible approach for program-level curriculum development, review and renewal at Macquarie University. However, this raised operational concerns within the LTC. As such, LTC managers initiated the DDI Sustainability Strategic Project to review the project outcomes and evaluation reports for the purpose of establishing a *sustainable* process for the DDI process using existing LTC resource allocations and management.

This report outlines the results of the DDI Sustainability Strategic Project, subsequent DDI events including an international cohort, and associated research that have affirmed the effectiveness and sustainability of the DDI process. It concludes with recommendations for implementing DDI across a range of program development contexts.

2. What is the DDI and how does it work?

DDI is an evidence-based collaborative approach to program design and development. The team-based learning design process is activity based, iterative, forward-looking, and grounded in everyday educational practices. Program teams collaborate to develop design patterns that work with what is practical in context, rather than what could be effective in theory in the future. The DDI comprises four stages that follow a spiral and holistic approach to curriculum development. Figure 1 outlines the stages and provides a short description of the steps involved within each stage. One of the powerful additions to the DDI process, when compared with other models of learning design (e.g Carpe Diem

process) is the 'consultations'. These consultations allowed the necessary time for the teams to embed the outputs of the DDI into practice and supported the community configuration.

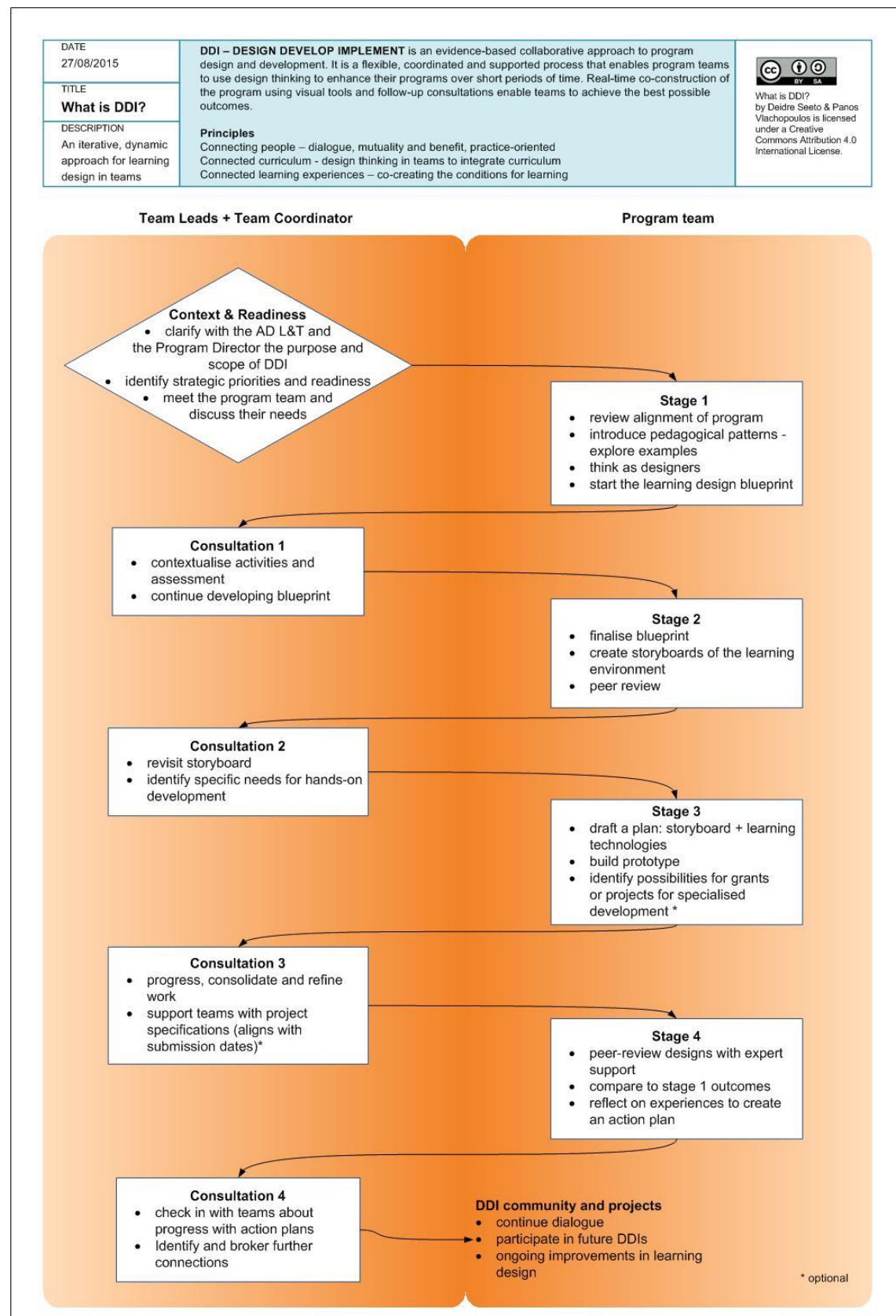


Figure 1. The Design Develop Implement process

3. DDI Implementation models

Four iterations (models) of the DDI process were piloted during academic year 2014 with Macquarie University academic teams. In 2015 the DDI process was also piloted with a cohort of international academics from mainland China. A SWOC analysis of each of the iterations was conducted based on feedback and lessons learned from the participants and facilitators as well as from an extensive review of the literature. The four emergent models are presented in Figure 2 and are as follows:

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27/08/2015
TITLE
How DDI works
DESCRIPTION
DDI implementation models for Programs and units

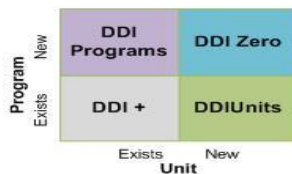
Design Develop Implement (DDI)

The DDI comprises four stages that follow a spiral and holistic approach to learning design. The intervals between stages and consultations allow the necessary time for teams to embed the outputs of the DDI into practice.



Four models

Drawing on three iterations involving all faculties, we derived four models to support academic teams to (re)design their programs with the view to sustainable practices.



Implementation patterns

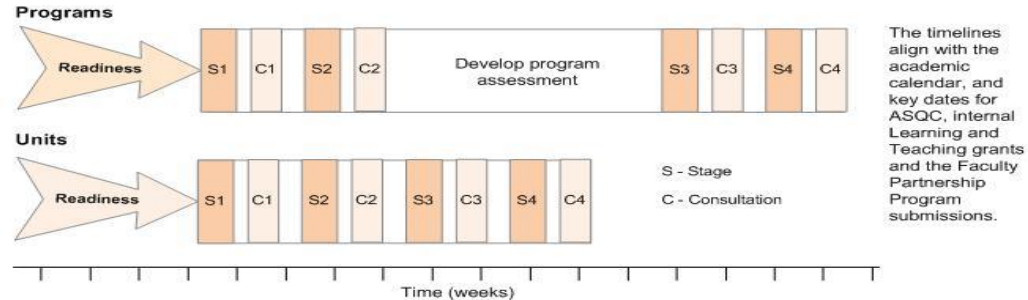


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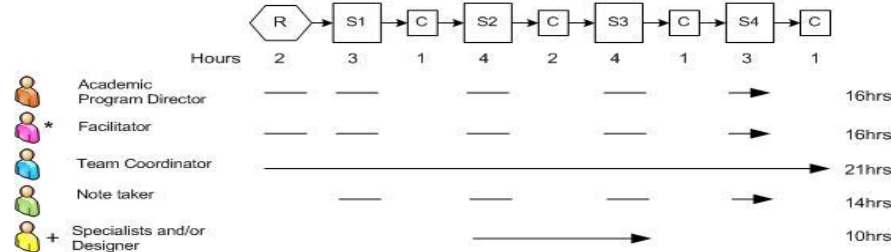
How DDI works by Deidre Seeto & Panos Vlachopoulos is licensed under a Creative Commons Attribution 4.0 International License.

Resources: Scenario for three program teams

The support team size per program team is the same for each model.

Feedback confirmed that independent support keeps teams on track.

* only one for the series



1. **DDI Programs.** This model supports academic teams to develop a new program from a pool of existing units. The emphasis is on the development of the philosophy of the new program and then on aligning/redesigning existing units (from the same or different faculties) to meet the outcomes of a new program.
2. **DDI Zero.** This model supports academic teams towards the development of a new program that requires development of new units. The emphasis is on the development of the philosophy of a new program and the development of new units assuring best alignment between program and units.
3. **DDIUnits.** This model supports academic teams to develop new units in an existing program. The emphasis is on making sure that new units are developed in a way that best fit the overall philosophy of the program.
4. **DDI+.** This model supports academic teams to align existing units within an existing program. The emphasis is on the review of existing units and the application of small changes (interventions) across some or all of the units within an existing program. A more structured version of the model was piloted as intensive two-day approach—the FPP Connect- which aimed at connecting the DDI methodology with the FPP methodology.

The DDI in any of the four models requires the involvement and commitment of a program team of academics (incl. the Program Director), a team from the Learning and Teaching Centre and invited participants from other university services (e.g. the Library or Careers) as required. Human resources required are illustrated in Figure 2, Section Resources: Scenario for Three Program Teams. The different roles and responsibilities for the recommended involvement of academic and professional staff in the DDI process are shown in Table 1.

Roles	Capabilities (Skills, Knowledge, Values) Required	Role
Facilitator	Facilitation, communication, consulting, teamwork, pedagogy, knowledge of trends across sector	To lead the DDI process across all teams and to communicate with relevant stakeholders
Team Leader	Facilitation, communication consulting, teamwork, pedagogy, knowledge of trends across sector, project management	To guide and support the DDI process at a team level and intervene with questions and comments
Note Taker	Clear concise and timely Note takers should aim to maintain a neutral standpoint.	To accurately note all ideas and report back to the teams.
Library consultant	Information Literacy Skills Communication	To provide specialised advise on information literacy as /when required
Learning Skills Consultant	Learning Skills Understanding of students needs	To provide learning skills advise as/when required
Educ Media	Audio Visual 3D Design Other media skills	To provide media advise as /when required
Educ Designer	Learning Design iLearn Other learning technologies Communication Project management	To assist with Session 3 of the DDI; help with ilearn development and implementation

Table 1: roles and responsibilities

4. The DDI process: feedback from the participants

The project team systematically evaluated all iterations of the DDI process using both focus group methodology and questionnaires. The key message that emerged from the evaluation is the ability of the DDI process to ‘connect people’ within and across Faculties and provide just-in time support from experts in learning and teaching. The following direct extracts from the focus groups are illustrated of this message:

“it's been a really valuable exercise for a host of reasons. It's been the relationship building component of it, and those opportunities for collaboration.” (DDI participant)

“ It would still make sense for you to get someone from outside the department to be the facilitator.”(DDI participant)

“we're also talking about within an institutional framework where there's quality and standards requirements and those kinds of things. So the value of having your specialist learning and teaching person to guide that I think is - shouldn't be underestimated. We're— by and large--we're discipline specialists, most of us.” (DDI participant)

Another important points raised was the potential of the DDI methodology in empowering the participants to bring together discourses, tools and practices with an overall aim to improve their programmes. As other DDI participants reported:

“...giving us some of the language and concepts to really start to move our own internal conversations forward”(DDI participant)

“...helped us visualise how our modules are to be, and the sequence and everything else that goes with it – but having the examples that we could look at that are actually working, that are similar to the ideas that we have. Seeing things that actually work online has been really, really helpful.” (DDI participant)

5. Recommendations

Answering the question “what is the most sustainable way in which the DDI may be rolled out across Macquarie University?” is not easy. Since the DDI is all about ‘connecting people’, the questions about sustainability is not so much about the number of people involved but about working smartly together to get the best possible outcome in a feasible timescale. Figures 1 and 2 outline the process and implementation models for consideration as a university-wide approach for program development. This involves introducing the DDI as a learning design support process **at a program level** with full engagement of the program directors from the start. We recommend that the DDI process can support the Learning and Teaching Strategy in the following ways

1. Program directors are ‘trained’ in the DDI methodology, are familiar with the templates and resources available to them to initiate a DDI and they take ownership of the process with their teams. The DDI can and should become a process that empowers program directors to fulfil their roles as gatekeepers of the curriculum. Support from the LTC will be provided as required. A ‘training’ DDI session should be prepared, including a comprehensive website.
2. The DVC Academic, PVC or AD LT may initiate a round of DDI sessions under a Strategic Priority theme. For example they may wish to nominate academic teams to participate in a DDI process with an aim to redesign aspects of their programs and units for making best use of physical and digital spaces or better linking between teaching and research. This DDI process will be initiated and supported by the LTC or the Office of the DVCA.
3. Aspects of the DDI methodology can be used in conjunction with other established processes at MQ (including FPPs and/or LT Grants opportunities) to support the scoping, planning and delivery of strategically important projects.

However it is imperative that the DDI is facilitated by academic and professional staff that is trained in the DDI methodology but also have the right knowledge and attitude towards team-building and open space techniques. Therefore additional training may be required for such staff.

The DDI process was discussed as a potential university-wide approach for program design at Macquarie University in September, 2015. The discussion was held during Learning & Teaching week involving the PVC, Associate Deans (Learning & Teaching), FSQC Chairs, HODs, Program Directors and Unit Convenors. The approach was supported and raised questions about the roles and responsibilities of key stakeholders involved in program development. We trust that the DDI sustainability document answers some of the questions raised.

6. Conclusion and external endorsement

We believe we have some compelling evidence of the impact of DDI as a viable model for learning design thinking – in encouraging people to create, collaborate and share learning design patterns and lessons learned. Global experts in the area of learning design and professional learning have also endorsed the DDI methodology. Some of their key points are summarised in the following excerpts:

From my perspective, the DDI initiative exemplifies the ideal way of working with colleagues to develop (or further develop) their curricula. It is needs-based (i.e. contextualised to the courses that individuals or teams are themselves leading), and is also learning and teaching led in that colleagues begin by reflecting on their learners, their subject, and what they are hoping to achieve before then considering how they might get there. (Keith Smyth, Professor of Pedagogy, UK)

The greatest value of DDI is that it is clearly rooted in the growing tradition in Higher Education which recognises that an approach to designing learning for future needs (rather than delivery of information or exhortation) is essential to positively impact on students' learning experiences in Higher Education, and secure value from digital and physical learning environments. (Professor Gilly Salmon, PVC Education (Innovation), UWA)

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