

The Six Principles of Learning Design:

Designing learning for performance



A Practice Note

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[Assessment for Changing Nature of Work](#)

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Learning for and at work changes the role of educators and the purpose of learning. Between dynamically changing organisational practices, global, and technological developments, adult educators are having to constantly evolve their practice to ensure they keep abreast of learning challenges and support learners to thrive in these changing contexts. This not only involves understanding who the learners are and how they learn, but also designing and facilitating learning that reflects the complexities and nuances of work and development of abilities that enable learners to thrive in the broader uncertain, changing conditions.

Deep understanding to deal with change, rarely comes from reproduction of technical / disciplinary knowledge, but from the ability to synthesise and apply learning. Resilience and an ability to thrive in the face of change have become core elements we need to design into learning experiences.

The 6 principles of learning design (6PoLD), aims to assist adult educators in thinking about how to design learning holistically, so that doing and knowing are integrated, leading to strengthened learning outcomes.

To do so, such learning also facilitates learning to be and become a particular profession, vocation or role.

For some time now we have seen shifts in thinking about learning and assessment, from something done to learners, to a more collaborative empowering approach to learning and assessment. This shift sees:

- learning and assessment as fostering learning
- developing learners' capability to continuously learn - beyond the course
- learning how to participate as a member of one's community
- learning how to think critically in order to take ownership, responsibility
- action for one's own learning needs

Learning can no longer be thought of as just preparing students/learners for 'now', for solving predictable, standard problems and for their ability to recount or reproduce content. Rather as educators, facilitators, trainers, curriculum designers, we need to develop our learners' capacity to thrive in dynamically changing contexts. This requires a shift from front-end loading of content and focus on assessment of learning (i.e. summative assessment) to creating dynamic learning environments built on authentic experiences.

There is considerable research that highlights that learning is powerful when learners are actively engaged, and their learning experience is embodied and holistic. This necessarily involves learners in giving and receiving feedback and making judgements (Bound, Chia & Karmel, 2016; Boud, 2010). Deep understanding and learning to learn are critical for positioning our learners to thrive in constantly changing contexts, be they in work settings, navigating changing labour markets and demands or family and community.

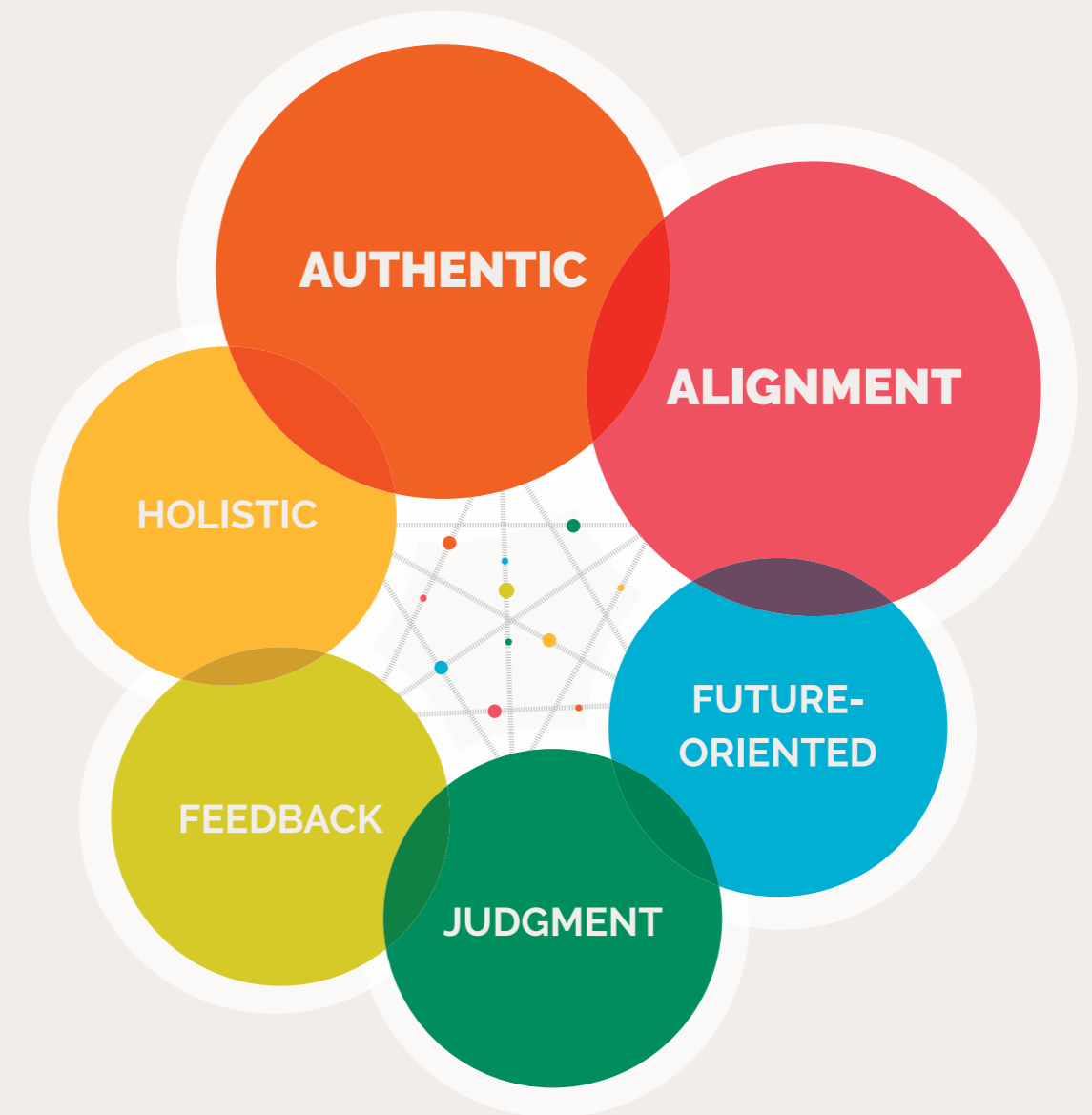
Educators, curriculum developers, assessors and learners themselves are all involved in helping the learner master (basic) disciplinary knowledge and skills as well as develop the awareness, disposition and conscience to "thrive" in the world... The goal of "future-orientedness" highlights the profound challenge of preparing learners/ourselves for the uncertainties of the future which is driving the shift towards a more learner-centric approach that makes ethical as much as economic sense, and where learning is envisaged to be more widespread and self-directed.

(Bound et al, 2016, p.72)

What are the 6 principles?

While each of the six principles is described separately to provide the foundation on which to support the start of thinking and applying these principles, each is actually necessary and related to one another and should be collectively present in the design of a module/course or program (to a greater or lesser degree). Having said that, the authors deem **authenticity** as the most important amongst the principles, as without authentic activities (and/or settings), it is difficult to achieve the other principles.

Figure 1:
The 6 Principles of Learning Design
(Bound, Chia & Karmel, 2016)



Use of real world work practices and settings
Embodies complexity of work and enables engagement

Design that involves every aspect of learning so that all work together for a common purpose.

- Integrates knowing, doing, thinking and feeling.
- Integrates theory and practice, technical and generic, and learning to learn capabilities.
- Use of multiple senses.
The embodiment of learning.

- giving and receiving feedback from multiple sources
- opportunities for learners to act on their feedback

- Enables learners to make judgments about their own and others' performance
- Involves making and evaluating ethical judgements

- Learning to learn
- Deep understanding – thus enabling application to multiple situations and contexts
- Consideration of multiple perspectives
- Inquiry



Authenticity

*Use of real world work practices and settings
Embodies complexity of work and enables engagement*

Authenticity brings a focus to performance that is required in real work settings. Learner engagement is a critical aspect of authenticity, as is engagement with the complexities and nuances of the work of a particular profession or vocation (including cross boundary work). Generic courses such as how to use excel can also meet these requirements through the examples and real scenarios used in practicing particular skills and in designing the learning tasks or activities. Accompanying such practice with opportunities for peer dialogue on problem solving brings a measure of authenticity to a short course. Courses of any length can be anywhere along the authenticity continuum (see authentic column in Table 2, pg 9).

Authenticity does **NOT** necessarily mean that all tasks or activities are about doing the work in real work settings – as this is not always feasible or appropriate (e.g. for short courses, or for highly specific skills such as using excel).

The alternative is to bring the complexities of the work into the classroom environment and/or technology enabled environment, through for example, learners engaging in or with:



Peer sharing of experiences



Complex case studies based on real life examples



Solving of complex problems that are based on real life examples



Practice exercises that require the integrated application of technical and generic/soft skills



Tasks / activities that reflect performance required in work settings



Tasks / activities that mirror the way knowledge and skill are performed in real settings and/or take place in real work settings

Table 2 provides some examples of the differences between non-authentic design and facilitation and authentic design of learning. Note that in authentic design, learners are actively engaged, the activities lend themselves to lots of dialogue amongst peers to assist with developing deep understanding that is holistic. As such there are opportunities to experience the embodiment of learning, to bring theory and practice together, to integrate technical/disciplinary knowledge with soft skills. A consequence is that learners are engaged in higher cognitive level activity. As such, knowing and doing are integrated. This is the importance and value of authenticity – it enables the achievement of the five other principles.

Table 2: From traditional approaches to using authentic design

Traditional

Selecting a response

Learners are given a set of possibilities from which they are required to select the correct responses

Contrived

The task or activity is separate from the context(s) in which it is carried out

Recall / recognition

This is the lowest level of Bloom's taxonomy, requiring parroting back without necessarily understanding or being able to apply

Instructor centred

The instructor is the focus, does most of the talking

Indirect evidence

Learners are given evidence that may be partial, not reflective of the complexities of work practices and settings. They are not encouraged to actively make judgements about the evidence.

Performing a task

Learners select or are given tasks to perform where they are required to make sense of and respond to the complexities of work

Real-life

The task or activities reflect the complexities of work practices and settings

Construction / application

These are higher levels of cognition and require holistic understandings. Requires learners to bring together different aspects required for performance

Learner centred

Learners and learning are the focus, they are active meaning makers and actively engaged in learning

Direct evidence

In the process of meaning making, learners draw on their own or peers' experiences, data or materials they have collected, or real examples. Learners make judgements about the veracity and quality of the evidence

Authentic

Adapted from: Deakin University. (2016). Authentic Assessment. Retrieved 27 September 2016, from http://www.deakin.edu.au/_data/assets/pdf_file/0005/268511/AUTHENTIC-ASSESSMENT.pdf



Alignment

Design that involves every aspect of learning so that all work together for a common purpose.

Alignment (what John Biggs (2003) describes as constructive alignment) refers to all aspects of design to form a cohesive whole. So **learning purposes and outcomes, assessment design and learning activities and the place of learning, need to support each other**. For example, a short course that has the purpose of developing participants' report writing skills and has as its assessment a series of multiple choice items, is clearly **NOT** aligned. For there to be alignment, the assessment would need to be the writing of a report for a real audience (and thus the assessment is also) which would make the learning and assessment authentic.

How does alignment relate to the other principles?

While all the principles are integral to each other, **authenticity**, **holistic** and **future-oriented** are perhaps most closely interconnected with **alignment**.

In this example, the course intention is to teach a particular software accountancy package commonly used by firms, to increase learners' employability.

Example of poor design

1

The course takes place over a nine-month period and learning consists mainly of reading content online with some face-to-face time and doing exercises that focus on technical know-how.

2

The exercises do not include any of the many ways in which different firms adapt and use the software.

There is a disjuncture between the intent of the course to contribute to learners' employability, the learning environments, the design of the activities and the materials that are mainly technical.

3

Additionally, the focus is only on the know-how, with limited development of deep understanding (some call this know-why) that would enable learners to adapt and problem solve, is missing from the design of the exercises and the learners' experiences.

Learners felt cheated and ill prepared for using this software, despite having paid considerable sum for what was a costly course.

Example of good design

To align the design of learning with the complexity of the work, the facilitator / trainer could have brought in guest speakers from a range of firms and/or visits to a number of different firms where the software was being used, discussing how the firms used the software, what the challenges were, and how the learners would address these issues.

Additionally, developing learners' deep understanding of the purpose of the software and its potential different uses would enable problem solving and meeting of challenges – this is an aspect of the future-oriented principle.

To ensure learning is holistic, the separation of know-how and know-why needs to be addressed, as does the separation of technical and generic. For example, complex case studies that not only involve enabling of learner's problem solving capabilities (future-oriented principle), but require learners who have different roles, to collaborate would contribute to holistic design of learning. By addressing issues of alignment, it is also possible to include other principles of learning design.



Holistic

Integrates knowing, doing, thinking and feeling. Integrates theory and practice, technical and generic, and learning to learn capabilities. Use of multiple senses. The embodiment of learning.

Holistic aims for **learning to be inclusive of the wider ethics and values of the profession and/or occupation, of integrating knowledge, skills and experience**. "Integrated-ness" suggests the inseparability of learning from the learner and that which is learned, or the connectedness between doing, thinking and being. Holistic design is important in developing the core of what it means to be a particular professional, or role or vocation.

Learning is regarded as an ongoing process of participation in relevant activities, and engagement in meaningful undertakings, rather than as a "thing", "product" or acquisition of certain "products".

(Vygotsky, 1978; Marchand, 2008; Ross, 1999).

While task specific practice (e.g. knife skills for cooks, or delegation for managers, using a cash register for a cashier) is necessary, such **practice should not be isolated from the complexities of the work**. Separation from the context in which specific skills are used can result, for example, in a cashier who is highly competent on the cash register in the practice setting, but who cannot operate in the real supermarket context when he/she is face-to-face with customers or dealing with products carrying defective barcodes/labels.

For example, much of the knowing for diverse professions such as cook, firefighter or engineer is demonstrated in the doing, and involves **being able to put knowledge to work** (Evans, Guile & Harris, 2011), **solve problems, work with others and with complexity and develop/cultivate capacities like awareness, responsiveness and fortitude**.

- **Analysing & Problem Solving**

This can partially be learnt through **analysis and problem solving** of complex case studies, that perhaps could be augmented from the learners' experiences. Learners need to experience the very real pressures of what it is like, for example, to work in a fast paced kitchen; or as a fire-fighter, face real fear; or as an engineer, to work with others to develop solutions.

- **Simulated Exercises**

Simulated exercises in technology-enabled environments can contribute to the development of such capabilities, as an early introduction to real work settings.

- **Observing Practices & Ways (in real world settings)**

Another (additional) strategy that integrates theory and practice, and brings into focus the importance of 'soft skills' as technical expertise is enacted, is to **arrange for learners to observe particular practices and ways of being in real work settings**. These workplace visits might initially be for two to three hours, then back in the classroom, learners share and discuss their observations. Short observations can be gradually lengthened where learners are gradually given responsibility to do the work. An alternative starting point might be to have learners watch a video and be tasked with identifying both the technical and the soft skills expertise, followed with sharing and discussion of observations and identification of what they need to mindful of.

Awareness of the standards of holistic performance is important to enable feedback and self-reflection. **Holistic** is closely connected with **Feedback** and **Judgement**.



Feedback

*giving and receiving feedback from multiple sources
opportunities for learners to act on their feedback*

Learners need to be engaged in giving feedback, and receiving feedback from peers, educator, work supervisor etc. (where appropriate) and in self-assessing their own performance.

The purpose of such a feedback loop is to improve performance – this is why **feedback needs to be a discussion and from multiple sources.**

Creating multiple feedback loops over the time of a module and of a program enables learners to:



understand how they are progressing



develop clarity about standards/expectations (quality) of performance

It takes time and exposure to various experiences and examples for learners to understand the quality of expected performance. It is helpful to provide criteria, a rubric or outline for the students to follow in order to authentically self-assess their work. Before summative assessment, it is helpful to provide opportunities for formative self-assessment activities. Such an approach contributes to the development of self-directed learners (Hains-Wesson, 2013).

Feedback and opportunities to make judgements about their own and others' performance are critical to performing at the required quality and level.

Feedback and **Judgement** are very dependent on each other, as principles of learning design.

Feedback is far more than expert-others giving feedback to learners.

Feedback should be dialogic – a discussion.



Judgement

Enables learners to make judgments about their own and others' performance, involves making and evaluating ethical judgements.

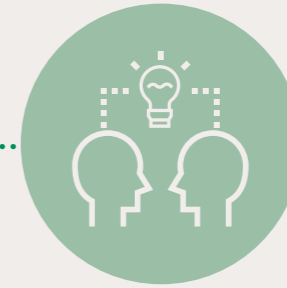
Judgement refers to the ability of learners to make informed judgements of their own learning.

Judgement is an essential part of the learning and assessment processes because the development and use of judgement is fundamental in enabling learners to understand their own work, and how they are doing/performing in relation to what is required/expected. Feedback and judgement are intertwined. Both require learners to be actively engaged in learning. (Boud & Molloy, 2013)

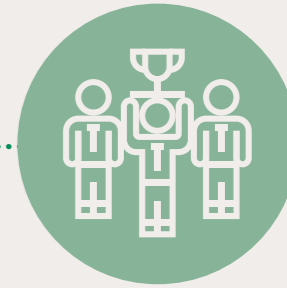
Designing for and facilitating judgement in learning requires that (Boud & Molloy, 2013):



the learning design gives opportunity for learners to make judgements of their own and others performance AND to act on feedback. This means that most practice opportunities are not assessed summatively



learners are expected to actively participate in making individual and collaborative judgements



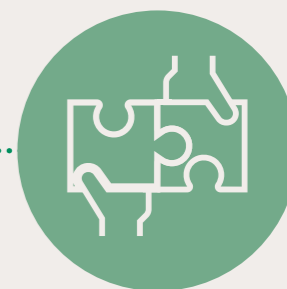
opportunities over time are given for learners to compare their performance with the expected quality / level of performance



tasks are incrementally increased in complexity and expected quality of performance



learners contribute to, or at least discuss, the agreed criteria for making judgements



practice opportunities are given for making judgement of others' performance to build the skills in:

a) comparing performance to required quality

b) giving constructive feedback – facilitators may need to provide learners with appropriate tools for this process



learners are given responsibility for their learning

All of these processes contribute to learners' **future-oriented** capabilities



Future-Orientation

Involves learning to learn, deep understanding – thus enabling application to multiple situations and contexts, consideration of multiple perspectives, inquiry.

Future-orientedness involves many of what are variously called 21st century skills, or the new 'top 10 skills', such as critical thinking, creativity, learning to learn.

Future-orientedness refers to learners' ability to face future unknowns and new challenges beyond the immediate course/training. The emphasis is on the ability to resolve unfamiliar or non-standard problems.

To be able to do this, future-orientedness involves many of what are variously called 21st century skills, or the new 'top 10 skills', such as critical thinking, creativity, learning to learn. Deep understanding of a discipline, a process, is required for effective solving of the unfamiliar. Deep understanding is developed through exposure to multiple, different perspectives (e.g. points of view, conceptual models, ways of thinking, doing, beliefs...) which in turn requires critical thinking, and the ability to evaluate different forms and sources of 'evidence'. **Having inquiry skills, knowing what questions to ask, how and where to gather data to assist in meeting challenges is all part of future-orientedness.** "Meta-thinking" processes (using big-picture thinking or conceptual frames) are important for making sense of the unfamiliar (Stack & Bound, 2012).

Using the 6 principles

In building in such opportunities, the educator is contributing to learners' capability in learning to learn, being aware of their own learning processes, knowing how to think and deciding how to be a particular profession, vocation or role.

Designing **future-orientedness** into learning activities, means learners are required to:



be exposed to different learning approaches, to stop, discuss and think about how they are approaching a particular challenge;



become aware of the types of questions they ask, of how they approach a challenge that is unfamiliar (by, for example, pointing out what they observe in others – this encourages reflection on own questioning and approaches)



compare and contrast; to work out the pros and cons of different ideas, approaches, solutions, etc. (this requires exposure to multiple perspectives/ approaches).

Such techniques contribute to learning to learn capabilities and to developing deep understanding, important in being able to meet unfamiliar challenges or situations.

There are many techniques and tools for enabling the development of learning to learn (meta-cognitive) capabilities available on the [IAL website](#):

[The Dialogic Inquiry Map](#)

[Other Resources \(to enhance learning design\)](#)



Understanding learning and the 6 principles of learning design

As is evident in the description of the principles, learners are engaged in learning with all their senses, wherever possible. Studies have shown that being immersed in a particular kind of learning environment profoundly structures the learners' "social knowledge, worldviews and moral principles that denote membership and status in a trade" (Marchand, 2008, p. 246). In other words, **our learning environments need to enable learners to experience what it means to be a particular profession, vocation or role.**

Check!

While there will always be times when it is necessary to use facilitation techniques that are towards the monologic end of the continuum in Figure 2 through for example giving short lectures, it is necessary for learners to actively engage with the materials, and with each other in order to build / co-construct knowledge. This process involves more than having group work. Rather, learner choice, use of authentic materials, issues, problems, challenges etc., multiple instances for dialogue that provides for opportunities to return to the concepts, ideas, processes (the content of the course) where learners provide feedback and make judgements about each other's ideas and thoughts is what is required for effective learning (see practice not for Dialogic Inquiry).

Monologic

Role of Educator: Educator as expert & source of knowledge

Role of Learner: Learner is passive recipient

Continuous lecturing at

Lecturing + asking closed questions

Lecturing interspersed with open questions. Discussion is

Lecturing interspersed with group work. Report back discussion mostly between educator & learners

Dialogic

Role of Educator: Educator as facilitator, scaffolds but increasingly hands over responsibility to learners*

Role of Learner: Learner actively engaged, part of community

Educator as facilitator, critical questioner +*

Learner actively engaged, part of community, problem solver, critical questioner, reflexive

Short lectures interspersed with group work & exchange between learners & learners & educator

learners work with authentic problems, are posed challenges and as a result, learners engage in inquiry

learners work with authentic problems learners choose the authentic problems learners engage in inquiry

learners work with authentic problems learners choose the authentic problems learners engage in inquiry learners voice is valued as a source of knowledge building

As an educator, manager of curriculum, curriculum designer, quality assurance personnel, **where is your comfort zone on this continuum?**

Figure 2: Monologic – dialogic continuum

Examples indicating you are more towards the monologic end of the continuum, where learning is understood as acquisition of knowledge which is the property of the individual:

- use language such as learners 'acquire' skills, knowledge etc.;
- believe learning is mainly individual and cognitive thinking;
- talk about 'testing' knowledge or learning;
- design learning that is about delivery of content or where the facilitator do most of the talking;
- believe learners can only make sense of something once you have taught them the steps or have necessary prior knowledge.

Examples indicating you are more towards the dialogic end of the continuum, where you believe in learners' ability to create and build knowledge (their own understandings and improve on ideas being discussed), and that learning requires exchange and interaction with others:

- use language such as growth, develop, learning is a process, learning is embodied;
- believe learners make their own sense or meaning and that learning is social;
- focus on assessment of performance that is holistic, design learning so that learners are actively engaged, have choices, are given lots of opportunities for dialogue (that is exploratory), learners are required to be self-directed (developing these capabilities are built into the course design and facilitation); and
- create multiple, complex experiences for learners where they need to make sense and meaning.

Where did the 6 Principles come from?

The 6 principles encapsulate an important finding from an IAL research project undertaken by Centre for Work and Learning (CWL) researchers, Helen Bound, Arthur Chia and Annie Karmel.

The research sought to address the question of how can assessment design and practices be shaped or enhanced to meet changing policy and workforce development needs. The study delved into how different contexts mediate assessment design and practices, the experience of learners, adult educators, curriculum designers and employers in these practices.

The researchers used an **ethnographic (observing learning and assessment, document analysis and interviews) approach** to study six cases of different types of learning and assessment experiences from formal courses to structured learning in work settings. Participants were from diverse fields – IT network engineers, aircraft engineers, specialist doctors, cooks, firefighters and workplace learning facilitators.

Importantly, the study understood assessment, not as purely summative assessment, but as entwined with learning. That is, assessment is a learning experience in itself, so in designing and facilitating learning, assessment is integral to the learning process. Our (the researchers) work with stakeholders, encouraged us to reposition our 6 dimensions of assessment to the 6 principles of learning design (which implicitly encapsulates assessment).
Bound, H., Chia, A. & Karmel, A. (2016). Assessment for the changing nature of work: Cross case analysis. Singapore: IAL.

Also available are [6 individual case study reports](#).

The Researchers



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