Accepted version of Boud, D. (2023). Equipping and assessing learners for the ever-changing workplace: practices, assessment and evaluative judgement. In Bound, H., Edwards, A., Evans, K. and Chia, A. (eds) *Workplace learning for changing social and economic circumstances*, Routledge. DOI: 10.4324/9781003227946-11

Equipping and assessing learners for the ever-changing workplace: Practices, assessment and evaluative judgement

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In recent years, conventional answers to questions about how education can prepare students for the next stage of their journey through life have been challenged. A greater focus on direct preparation for the workforce and the production of work-ready graduates is dominating discussion in higher education. What constitutes preparation for work and life remains contentious. What kind of links should there be between what is learned in educational institutions and what is required for work?

Education is about more than immediate employability, but what that more should be is not immediately apparent in current discourse. What is needed for work changes and there is rarely direct correspondence between what education produces and what employment needs. More seriously, there is little detailed scholarly analysis of what is needed for employment. Certainly, there are multiple surveys of employers that report the need for problem-solving skills, ability to work in teams, communication ability, digital awareness and so on. But how are these requirements interpreted, conceptualised and translated into the curriculum, and what is it in these areas that are really needed?

Increasingly, there is recognition that it might not be specific knowledge and skills required in any given case. But, rather, the ability to learn how to learn within a given domain, or more particularly to learn in situations that differ, often markedly, from those in which students have been taught. Of course, every form of work is different and changing. There will always be a need for context-specific training in any form of employment. However, the need is for graduates to be trainable, not fully trained, for whatever is needed. Transferable skills and graduate attributes have thus risen in importance.

This chapter explores the preparation all students need for a changing, unknowable world. It takes a conceptual approach starting with considering the assumptions made about knowledge and practice, and it questions whether we have a realistic view of what work involves. It focuses on considering the notion of 'practices' as the basic building block for all activities. The chapter queries whether these are sufficiently recognised in education. In accepting that learning is positioned as an individual activity in educational institutions, it identifies the curriculum in general and assessment as key mechanisms that hold this view in

place. It looks afresh at what is needed for anyone to learn in complex situations and discusses the idea of developing evaluative judgement as a frame for reconciling the tensions between learning for a world of practice and individual development. It concludes by focusing on challenges to be faced in preparing students to confront an ever-changing world.

Assumptions about knowledge and practice

The conventional assumption of education is that knowledge is transferable and independent of context and is held by individuals who subsequently apply it in a variety of different situations. The challenge, often faced by graduates, is to know what knowledge to apply in which context. This position contrasts with the emerging assumption that knowledge is both context-independent and practice-specific and that it is held both in practices and in distributed systems. In digitally enabled distributed systems, it is normally accessible from anywhere as needed. The challenge is to judge what knowledge is appropriate, to access it, assess its value in situ and deploy it appropriately.

When knowledge is widely available, the challenge is to know what to access for what purpose, how to assess its trustworthiness and how to apply it appropriately. This needs problem formulation and problem-solving capability, but it also involves a greater emphasis on judging what is appropriate from an almost infinite source of data. Additionally, it involves judging what is already known and how to bridge the gap between that and what is needed.

Nevertheless, many features of classroom learning are still needed when people work together. Learning is a social and material activity, and when centred on the practices of work, much will not be generated by training or formal development. Thus, navigating and understanding work itself will be a central concern of all practitioners.

The context of work

Specific preparations needed for work cannot be readily determined. Few areas of any kind of work are stable and unchanging. Change and uncertainty occur for many different reasons, be they economic, social or technological. Government exhortations that education should prepare students for work might be an attractive political slogan but can be profoundly misleading as a recipe for an effective curriculum and pedagogy. Students need to be prepared for change, which is ongoing, not work that will have changed by the time students are employed. To take this position is not to deny that much of what is learned in educational institutions is worthwhile, but the way in which it is organised may not permit students to cope with the changes they will face.

While there will always be niche areas where there is a direct connection between what occurs in education and in work, such as in the latter years of a medical degree, we need to look beyond these to what is applicable more generally. Two substantial sets of ideas are beginning to transform ways we think about learning for and in work. The first concerns how normal activities are conducted and what that implies for learning. The second focuses on the monitoring processes we bring to judge whether we are working well.

The conventional view of learning for work embedded in the competency frameworks that guide many vocational education and training sectors assumes that work processes can be analysed and a set of competencies derived that encapsulate what is needed to be learned to operate effectively within any given industry or occupation. These competencies subsume the knowledge and skills required by individuals and are represented in terms of what a person should be able to do within a particular domain of activity. Once learned, it is assumed that these competencies can be applied within any related context (Boud and Hager, 2012). Such a view accepts that the most important frame for learning comprises these industry-linked competencies. However, not all work, even in a given domain, is equivalent. Work is always embedded in a social and material context that governs how it is conducted, what is important to do and how it relates to other processes. Trainees might be able to learn procedures and the knowledge that goes with them, but not how these are situated in any occasion of work.

The substantial concept here is that work, and activity in the world more generally, is organised around what has been identified as 'practices'. Practices are meaningful conglomerations of sayings, doings and relatings in conjunction with material and symbolic objects that hang together in ways identifiable to those who are part of the practice (Kemmis et al., 2013). A practice in this conceptual sense constitutes a coherent aspect of what is done. A practice endures even when those involved change.

The second set of ideas focuses on what each person brings to any practice that helps them deal with and operate effectively within it. Clearly, having the requisite knowledge and competencies to be able to perform certain tasks is important, but having knowledge and skills and demonstrating performance under artificial conditions is not enough. If they cannot operate within a practice, they cannot be said to be adequately prepared. Workers need to have the wherewithal and desire to enact and communicate their performance in situ with the people and material resources they encounter. They need to be able to 'read' work in such a way that they can ascertain what is important, what constitutes doing something well and with whom they should be engaging and how.

Each person must make a wide range of judgements about what to do and how to conduct themselves. Without these evaluative judgements (Tai et al., 2018), they will be unable to enter effectively into a new situation or learn what is needed of them there. People take into any practice a disposition towards making such judgements and monitoring their learning and performance with them, but they need to contextualise this within each situation. While the ability to make evaluative judgements has some common features, it is domain-specific and needs to be developed in the kinds of disciplines and contexts in which it will be used. Making such judgements is a commonplace feature of everyday life; however, students still need to be able to develop this specifically with regard to the new knowledge and capabilities demanded of them by their studies, and subsequently by the work in which they engage.

Evaluative judgement is undertaken both individually and collectively. It is influenced by the assessment regimes of courses. Assessments may enhance or inhibit students' capacity to make evaluative judgements (Boud, 2022). If students are only subject to unilateral assessments in which judgements are always made by others using criteria that students

have had no role in influencing, and they have not had opportunities to practice making their own judgements in their courses, then their ability to develop their evaluative judgement will be attenuated. To develop evaluative judgement, we must first consider how students are normally assessed and how that might relate to the development of appraisal competencies.

While these sets of ideas originate from different traditions and have grown in different contexts – philosophy, workplace learning, vocational education and higher education – this chapter seeks to show how each is necessary for equipping learners to operate successfully in complex settings.

The challenge of practices

Education conventionally sees the world through the skills and attributes of individuals, i.e. a focus on what an individual person knows and can do. Such a standpoint assesses the achievement of each person separate from others. It records this as a complete account of what a course has achieved. Collaboration in such a context may be interpreted as collusion or even cheating, for which punishments are harsh. Such a view assumes graduates subsequently get together and undertake the complex processes needed to function in the world by drawing on each person's separate set of knowledge and skills acquired in educational institutions. This is an unrealistic expectation without a clear path to how this synthesis can occur and how a person can learn to engage in authentic practice. At the point of graduation, students do not mysteriously change into persons who can work cooperatively with others to meet the needs of their organisations. In partial recognition of this, courses add skills such as those of communication with others and knowing how to work together. These now form a modest part of most curricula, though how well integrated they are with individual development is open to debate.

Into this situation has come the important influence of the practice turn, observed across the social sciences (Schatzki, 2001). It provides a quite different lens through which we can view the world. A focus on practice theory shifts the focus from individuals and their knowledge or skills to that of how any form of work or activity occurs (Hager et al., 2012). It places practices, not individuals, as central to how we see work being performed. Practices are not regarded as the 'possessions' of individual practitioners' but are 'the collective 'property' of groups' as they undertake any task (Kemmis, 2005, p. 393). Practices have what Kemmis (2005) identifies as 'extra-individual features' as not only do humans shape practice but also non-human features – materiality, history and socio-political influences – are also afforded agency. The fundamental unit of analysis becomes the practice itself, rather than the individuals or the qualities of those individuals engaged in the practice. While some practices draw upon codified knowledge, they are not defined by this. Practices draw on considerable informal learning that is not classified or even noted (Boud and Rooney, 2015). However, Kemmis et al. (2013) suggest that there are signature practice architectures that characterise how practices operate and the conditions needed for them to occur. An important implication of the practice view is that we recognise that much is not codified nor systematised but is generated as practitioners deal with the tasks that confront them.

Practices have always involved people interacting with material objects, but these are increasingly strongly digital. Those involved in a given practice may not be co-present, nor may the material artefacts that form part of the practice be present either. The digital may mediate contacts between any or all the parties (such as through virtual meetings) as well as being a focus of the practice. Students need therefore to be prepared for practices that may be partly or wholly virtual. Working with others who are not co-present has become normal (Hager and Beckett, 2019) even before the acceleration of the isolation of the pandemic.

Preparation for practices

What kinds of curriculum and pedagogic practices are needed for students to develop practice capabilities? The rationale for changing the curriculum is that unless students learn in the context of practices, then they will not be prepared for what they will do no matter what the setting. Boud (2016) argues that we need to interrogate all course activities to examine whether they exhibit features of practices. Some need to be curtailed because they enshrine a non-practice-oriented view, such as transmissive lectures, whereas others need strengthening through the more conscious use of practice ideas. Examples of the latter include university-run clinics in health or law and the use of rich simulations.

In some cases, an obviously practice-oriented activity can be undermined by how it is assessed. For example, work-integrated learning activities can be limited by inappropriate assessment (Ajjawi et al., 2020). For example, students may act with others on genuine problems that need resolution but be judged on reports of activities separate from the practice itself. While it may be appropriate for students to engage in formative activities prior to work-integrated learning to reach a standard that enables them to participate in practices, if major summative assessments do not address the substantive extra-disciplinary learning gained in participating in practices, they are inadequate. Many typical academic tasks, such as essays or standardised reports, are unlikely to meet these requirements.

A significant challenge in designing courses for practice is the basic assumption of assessment. That is, assessment judges work of an individual separately from others. While it is increasingly common for group tasks to be added to the curriculum to promote collaboration, it is possible to make the reverse assumption the default. That is, learning occurs with others and with access to digital resources, except in limited circumstances where individual learning occurs. Students will learn to work with others if that is the expected mode of activity and if collaboration with others is not seen as collusion.

This shift has profound implications for assessment. It questions whether assessment, as we know it, has become inappropriate. Not just needing reform to accommodate working with other people, but being ill-conceived in placing the individual as the principal object of attention for assessment and reporting (for further on this, see Boud and Bearman, 2022). What may be appropriate for some forms of knowledge at some stages has been over-generalised to encompass everything.

The repositioning of assessment

How is present-day assessment unsuitable for practice? We have identified the focus on individual achievement: all grades accrue to individual students and represent their own performance even in situations in which they have worked or need to work with others.

Another reason is related to the first. When grades are attached to individual activities in which students cooperate with others, tasks become distorted to generate individual marks from group activities.

A third reason is the nature of the tasks on which students are judged. A key difference between education and work is that in education, students are typically not engaged in practices that have consequences for people other than themselves. Assessment tasks may be 'high-stakes' in terms of assessment but 'low-stakes' in terms of authenticity. Tests and examinations typically consider disaggregated knowledge formulated into separate questions. Substantial projects have become common in later years, but how authentic is their assessment? The audience for assessment tasks is normally the assessor alone. The task is undertaken for the purposes of assessment, not to make a difference in the world. Nicolini (2012) points out the importance of experiencing situations that can 'bite back' on the learning and provide what Goodyear and Markauskaite (2018) call intrinsic feedback from the environment not attainable through other means. Occasionally, the latter may occur in major projects and students may be encouraged to publish in the literature, which is a form of impact for a specific context. However, it is less common for projects to be directed to an external audience to address a problem or issue that they face, and less common still for them to be judged by the designated audience.

It might be unrealistic to change conceptions of assessment away from those focused on the individual as the unit of analysis. What is realistic is to have assessments positioned to prepare students for practices, which place less emphasis on individual knowledge recall and more on the use of knowledge with others in situ to more fully reflect the nature of knowledge and performance in practices.

Assessment that acknowledges practices

A first step is to formulate learning outcomes that do not inadvertently discriminate against a practice perspective, for example, when there is an overemphasis on subject knowledge or the marginalisation of learning with others. An example in civil engineering is that regarding a characteristic work practice – construction site visits. The practice of site visits permeates most parts of the construction industry but is surprisingly absent not only from the undergraduate curriculum but also from the continuing competencies of engineers (Reich et al., 2015). Assessments cannot be better than the learning outcomes they seek to judge. Learning outcomes therefore need to be founded on what practitioners actually do and on empirical evidence of how this takes place. Too often practices are abstracted from their context and rendered into abstract representations in the curriculum that do not reflect how they hang together in interactions between people and materials.

One way for assessments to reflect performance within practices is for tasks to involve students producing something that is both aligned with course learning outcomes but also conducted in a way that involves an authentic process with an authentic product. That is, in an educational activity that is a surrogate for a practice that occurs in the world beyond education. Examples are projects that address needs developed in conjunction with community members reporting to a real client; iterative mutual debugging exercises in

software engineering (Esterhazy, 2018) or crowdsourcing feedback in the social sciences (Salter, 2013).

How might such assessment look different from any project activity or from work-integrated learning discussed earlier? First, it would not be conducted by a student independently of others. It would necessarily involve them in working with other students or with other practitioners. Second, the processes involved would resemble those in normal work in the area of concern. This might involve a small team producing a single product or a person consulting with other people and other resources to reach a resolution. In either case, these people might not be co-present physically but could be distributed in different locations. Third, the product would address a need beyond the immediate assessment requirement. It might be commissioned by a community group, be part of a normal work product of an organisation or respond to the needs of a client. These would vary greatly depending on the purpose and nature of the course. In the sciences, it might be a community project or a research investigation (with others), in the health sciences, it might be responding to a patient's need in conjunction with the regular health practitioner and so on.

The adoption of assessment tasks of this kind might transform work-integrated learning from an activity in which students gain exposure to work to one in which the practices they engage in provide a necessary means of demonstrating the meeting of program learning outcomes. Of course, such activities already form part of assessment in some courses. What is different here is how they are framed and the rationale for the choice of activities so that assessment reflects specific practice characteristics.

An objection could be made that it is difficult to apply some of the normal criteria of assessment design in such circumstances as there is likely to be wide variation across tasks. It is certainly true that reliability is challenging when there are different tasks for different students that cannot be controlled for equivalence. However, there is a major improvement in long-term validity involved in the shift to practices. Validity is commonly too limited a notion that judges whether a task reflects the learning outcomes being tested for. But consequential validity now should be concerned not only with the effects' assessment has on learning but also with whether assessment tasks reflect the nature of practices.

Having different tasks for different students also imposes an equity challenge: how do we ensure that all tasks are equivalent and that some students are not unfairly advantaged? This is a more complex issue as many current assessments have an inappropriately exclusionary effect when all students complete the same tasks (Tai et al., 2022). Having different tasks for different students can enhance equity as it accommodates many different student characteristics not relevant to the outcomes being assessed. At the same time, it makes the choice of or allocation of different tasks more complicated to administer. Having the most advantaged students taking the easiest tasks is a trap to avoid, as well as ensuring that disadvantaged students are assisted in choices that accommodate their needs.

The role of evaluative judgement

Having as the bedrock of courses an emphasis on working with others on meaningful tasks does not mean that individual learning is absent or not needed. To contribute to others, it is

necessary to develop capabilities to self- and co-regulate one's own learning (Panadero et al., 2019), i.e. to both monitor and make decisions about one's own learning processes through self-regulation and also to be able to do this in conjunction with others through co-regulation. How such processes can operate within the framework of practices is yet to be substantially explored in the literature.
We can though draw on the idea of developing evaluative judgement to help illuminate some of the issues at stake. Evaluative judgement involves not only being able to do something but also developing an awareness that one can do it. It applies not only to judgements of one's own work but also that of others. It is closely related to the idea of reflexivity, i.e. being able to monitor one's own performance and that of others, as it proceeds in order to make adjustments to achieve a good outcome. The notion of evaluative judgement has been defined as 'the capability to make decisions about the quality of work of oneself and others' (Tai et al., 2018, p. 467).

Two key elements of evaluative judgement are, first, an appreciation of what counts as quality in the work being undertaken and, second, the ability to judge whether the work being produced meets the required standard (Boud et al., 2018). Unless those undertaking an assignment, for example, have a notion of what a successful outcome is and understand what criteria it should meet, then it is unlikely that work will be produced of sufficient quality. However, knowing what quality work looks like is not enough. It is also necessary to be able to see from the emerging work of oneself or another whether it shows progression in the desired direction. Evaluative judgement expertise develops through experiential learning (Fawns and O'Shea, 2019; Naidoo et al., 2021). It occurs within a social, cultural and material environment which necessarily has a direct impact on what quality looks like and how it is discerned.

Identifying appropriate standards involves very many different activities depending on the context and nature of the activity. In some situations, there may be a detailed specification or remit which must be decoded, interpreted and applied to the work at hand. In others, there may be exemplars of similar work to be inspected, analysed and processed for production deduced from them. In yet other circumstances, there may be explicit criteria to be understood and translated into language that could be appreciated by those involved in the task (Boud et al., 2018). Quality rarely presents itself in a transparent manner; it cannot be simply represented in a rubric; it must be deconstructed and reconstructed into meaningful and useable forms.

Similarly, making judgements of quality in one's own work or that of a team is not an obvious process. As well as discerning features of quality in the work at hand and how the gap may be bridged between these and an acceptable outcome, there are issues about how unconscious biases can be surfaced and managed (Joughin et al., 2019). Judgement is an ongoing process up to the acceptance of a final product ready for others outside the group to appreciate.

The idea of developing evaluative judgement encompasses earlier notions of self and peer assessment, which tended to be too focused on the act of assessment and marking itself rather than the reasons why it was important, and the capabilities it represented. Refined skills in self-and peer-assessment, which are a part of the evaluative judgement, are needed

not as an end in themselves or to substitute for the assessments made by authorities, but so that everyday learning can be profitably undertaken during education and training and, importantly, beyond it.

While evaluative judgement as an idea was originally developed within the context of higher education and was illustrated by many activities that could be seen as a part of an individualistic agenda, it is also applicable in the context of practices (Fawns and O'Shea, 2019). It is not only about individual judgements but about all those involved in whatever a practice is, and about the practice itself. A key attribute needed in a changing complex world with multiple interactions with people and things is the development of evaluative judgement and the ability to share such judgement and to work with others to improve judgements.

There is a particular issue in developing evaluative judgement within any ongoing practice whether it takes place in a work or educational context. It is that many aspects of any practice are taken-for-granted – this is the way it has always been enacted, so the assumption is that alternatives do not need to be considered. There are distinct sayings, doings and relatings associated with a practice that become routinised over time and shortcuts become accepted. The importance of evaluative judgement directs our attention to the need for reflexivity and questioning about whether the conventions should always be so and when they might be challenged. The evolution and change of a practice over time require this. Not all practices are the same in this regard. Some are acceptably routinised; others need continual vigilance. Part of developing and exercising evaluative judgement involves recognising what is routine and what should be questioned at any given time and where the focus of attention might be directed. When is innovation needed and when is it not?

Challenges to be confronted

While this chapter has proposed a greater emphasis on consciously using practices as part of educational experiences and following this through to assessment, there are many situations, particularly in courses that do not have direct vocational expectations, where this may not be appropriate, at least in their early stages. However, it is important not to dismiss such courses as out of the scope of the argument here. All graduates will end up as practitioners of something. The something may not have a direct disciplinary link with what has been studied though. All students should have experience of learning through practices. The extent of this may vary depending on what they study.

It is important not to underestimate the difficulties to be faced in implementing the ideas outlined here. Distinctive activities have become cemented within educational institutions which are quite separate from those of any form of work. A unique educational culture that varies according to discipline has become established. It is often not clear what the justification is for it. Although various educational practices have become entrenched, there are signs that a shift is occurring in each of the following areas.

Inappropriate curriculum models

The first of these are the assumptions held in many disciplines, particularly those that are science-based or procedural, that the curriculum should build incrementally on small building blocks, and assessment should follow the same path. The idea is that it should necessarily start with learning basic facts and terminology and only build on these after students have mastered them separately from any application of them to real problems. This has led to many low-level assessment tests, assessment that overly values memorisation and the isolation of knowledge from how it is used.

In a practice-based orientation, all tasks are positioned within practices and real contexts, which can become more complex through the years. Some enabling knowledge or skills might need to be tested in specific areas, but this should be a minor feature of an overall assessment regime which needs to focus on what complex and substantive tasks a student is able to do.

The centrality of group-based learning

The second challenge follows from the dominant over-individualistic notion of learning and assessment. It is that learning occurs primarily in isolation from others. Students may have been aggregated into classes to minimise the need for individual instruction, but they are often there for reasons of efficient contact with a teacher, not to learn primarily with and from each other. In the very early years of schooling, group learning is often the norm, but as students' progress through high school to higher education, this feature tends to diminish. This move is beginning to be reversed in some areas of higher education, but learning with others is still a small proportion of the overall mix in many disciplines.

Active management of group activities is also needed. Students do not necessarily learn to work together merely by being assigned to a group with people they are unfamiliar with and a task to complete. Placement in groups alone does not build working together; a substantial focus on how to work and how to deal with disruptions and group difficulties is needed at the start. Students need to take on different roles in different tasks, so they learn to participate from many different perspectives. Longer group activities with more continuity of membership may be required if students are to work within practices.

Authentic activities need authentic processes

It is necessary but not sufficient that students work collaboratively. The nature of the tasks they work on must be recognisably authentic, in terms of both the nature of the task and the objects, materials and processes that might be engaged. That is, they represent the kinds of tasks that practitioners might engage in with many of the expectations, constraints and outputs that they would face. Of course, this can be taken only so far: limits of time, resources and expertise will limit full authenticity. Just as important as authentic tasks and processes, however, is authentic feedback (Dawson et al., 2021). That is, feedback processes must reflect the kinds of information conveyed in practices and are conducted in such a way that students can respond appropriately.

Course fragmentation

While the move to modularisation and the shortening of the length of course units may have organisational benefits in terms of flexibility, these can easily disrupt the building of

the relationships needed in cooperative learning. Many group tasks do not persist long enough for students to move beyond the early stages of group development, such as storming and norming, to a productive phrase. This means that time is reduced for a focus on developing a practice together to build the group.

Resistance to group work by students is often a manifestation of the unsuitable conditions in which it occurs (e.g. Smith et al., 2011).

The ubiquitous nature of the digital

There has been a rather fruitless debate in the media about whether, post-COVID, education should return to being face to face. This assumes that students are preparing for a world in which practices normally involve face-to-face interaction. This assumption has not been valid for some time. Almost all work now involves some digital mediation, and in much work, this is dominant. We are therefore preparing students for a world in which they will need to seamlessly and elegantly move between physical and virtual presence. The only way that this can occur is if this is a normal feature of courses. It is not a matter of online versus face to face; both are needed in a fully integrated manner.

Consequential implications for assessment

It is insufficient for students to learn in practices but not also be assessed in them. We must find ways for assessment based on practices that involve students working with multiple others to be reconciled with an individualistic marking and grading system.

Conclusion

The core of learning in and for work is learning practices. This cannot occur in isolation from the kinds of practices that are being learned. Such learning is located and embodied. It requires engagement with appropriate contexts and involves learning with and from others throughout. We equip learners for practices by engaging them in ones that involve working with others and with appropriate materials in ways that resemble the kinds of practice they might encounter post-graduation. As part of this engagement in practices, students need to also develop their capacities for making evaluative judgements for themselves and with others, both to appreciate the standards required of them and so they can judge whether they are meeting them. Higher education courses are slowly moving in some of these directions, but a clearer focus on what is needed to prepare students for changing circumstances is required.

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