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Ian Brown

University of Wollongong, ibrown@uow.edu.au

Pauline Lysaght

University of Wollongong, pauline@uow.edu.au

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Abstract

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Well-designed environments that stimulate intellectual curiosity, encourage social interaction and promote a sense of community, support effective learning across the education spectrum. This paper presents a case study of a multi-functional facility situated at the University of Wollongong in New South Wales, Australia that meets this design brief. 'Early Start' will transform teaching, research and community engagement in the higher education sector whilst offering unique learning opportunities to children, young people and their families. Importantly, it also has the potential for addressing social, educational and economic disadvantage across many communities. The Early Start Facility incorporates state-of-the-art technologies in a purpose-built structure that includes a Children's Discovery Centre and connections to early childhood services, schools and community agencies in regional, rural and remote communities. This facility will enrich the student experience at the University of Wollongong and it will extend collaborative educational enterprises to children, their families and the broader community.

Keywords

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Early Start: Grand Designs for Learning

Ian Brown

University of Wollongong (NSW Australia)
ibrown@uow.edu.au

Pauline Lysaght

University of Wollongong (NSW Australia)
pauline@uow.edu.au

Abstract

Well-designed environments that stimulate intellectual curiosity, encourage social interaction and promote a sense of community, support effective learning across the education spectrum. This paper presents a case study of a multi-functional facility situated at the University of Wollongong in New South Wales, Australia that meets this design brief. 'Early Start' will transform teaching, research and community engagement in the higher education sector whilst offering unique learning opportunities to children, young people and their families. Importantly, it also has the potential for addressing social, educational and economic disadvantage across many communities. The Early Start Facility incorporates state-of-the-art technologies in a purpose-built structure that includes a Children's Discovery Centre and connections to early childhood services, schools and community agencies in regional, rural and remote communities. This facility will enrich the student experience at the University of Wollongong and it will extend collaborative educational enterprises to children, their families and the broader community.

1. Introduction

An infrastructure that will promote teaching, research and community engagement across the education spectrum, extending from early childhood to the higher education sector, calls for a 'grand' approach in terms of design. The Early Start Facility, situated at the University of Wollongong in New South Wales, Australia, meets this design brief by embodying a comprehensive approach to addressing the learning needs of those not only from different age groups but also from diverse backgrounds. From the main building in Wollongong to partner services in regional, rural and remote areas of NSW, as well as through relationships with national and international institutions, Early Start will provide a medium for collaboration and social change.

At the heart of this exciting initiative is the opportunity it provides for addressing the gaps in

equity that exist in Australia in terms of social, educational and economic outcomes for particular groups. The Bradley Review of Australian Higher Education (Bradley, Noonan, Nugent and Scales, 2008) identified the three most disadvantaged groups in higher education: Indigenous Australians, those from low socioeconomic backgrounds and those living in regional, remote and rural areas [1]. Of these, Indigenous people are more likely to share the disadvantages inherent across the other two groups. Educational disadvantage for all three groups begins well before entry to formal schooling and recommended solutions range from raising the aspirations of very young children and their families to widening participation in higher education. Universities, in particular, are encouraged to work collaboratively across educational sectors and with communities to improve outcomes for these groups.

With a clear focus on pedagogies that shape learning for the 21st Century and beyond, Early Start is designed to address disadvantage at all levels. Quite simply, it offers a world-class facility that will transform teaching, research and community engagement in the higher education sector. Drawing on contemporary design principles, a team of architects has worked closely with academics and community members to create a facility that goes well beyond what is often termed an 'industrial' approach in educational architecture. Rather, Early Start reflects current approaches that recognise the importance of the relationship between pedagogy and architecture. For Carla Rinaldi, it is the nature of this relationship that determines the quality of the educational experiences that generate learning and change at the level of the individual, the institution and the community [2]. This approach to learning is one that is well established in the early childhood sector but, as Harris (2010) observes, its potential has only more recently been recognised in other educational settings [3].

State-of-the-art technologies will combine with formal and informal learning spaces based on best practice design principles, extending the reach of higher education into early childhood services, schools and a range of community agencies. These facilities will enhance the training of students across disciplines, empowering them to work

collaboratively with children and young people, their families and communities. They will also encourage the development of new and rejuvenated subjects and courses to meet the demands of those living in regional, rural and remote communities.

By incorporating Australia's first Children's Discovery Centre into its main facility, Early Start will encourage the active participation of children and adults, whether on site or at a distance, in a range of learning experiences. In fact, various stakeholder groups including children from different schools in the region participated in the design process to ensure the development of what Fielding (2004) refers to as a more 'people-centred' space [4]. Stimulating exhibits and interesting educational programs led by experts in the field will pique the interest of young and not-so-young visitors. In addition, the Children's Discovery Centre will act as a catalyst for breaking down the invisible 'force field' that so often isolates higher education from the rest of the community by inviting public engagement with the sector.

Through Early Start the early years of life are acknowledged as pivotal in determining the wellbeing and success of individuals and communities. Raising aspirations through engagement across communities whilst providing access to facilities that embody best practice in teaching and research within the higher education sector are key aspects of this enterprise aimed at addressing entrenched disadvantage. As a 'world first' and a 'world class' facility, Early Start will play a leading role in providing opportunities for local, national and international collaboration aimed at enhancing social capital and addressing disadvantage in our most vulnerable communities.

2. A design for learning and engagement

The main building, located at the University of Wollongong's major campus in Wollongong, will act as a hub for collaborative activities across the higher education sector and the broader community. Key features of the building include three levels of teaching and research space overlooking a central atrium that houses the Children's Discovery Centre. Located on the ground floor of the building, the Children's Discovery Centre provides over 2000m² of activity and exhibit space, outdoor courtyards and discovery galleries. A two-level internal street integrates teaching and research spaces with the activities of the building. The utilisation of sophisticated ICT facilities ensures the connectedness of Early Start's three key elements. These elements include:

- a comprehensive suite of purpose-built and highly specialised teaching and research spaces housed within the main building;
- a Children's Discovery Centre designed to provide public entry as well as online access; and,
- connections to a range of early childhood services, schools and other community agencies situated in areas of recognised disadvantage across New South Wales.

The main building is specifically designed to foster teaching, learning and research activities. Areas that integrate face-to-face experiences with an online and virtual learning environment will provide a medium for enriching student access and engagement, particularly for those in regional, rural and remote areas who aspire to higher education. University of Wollongong students on campus as well as those at a distance will benefit from enhanced connections across many different sites, allowing access to a greater range of courses that can be delivered in innovative ways. Likewise, research facilities are designed to enhance collaboration amongst students, academics and the community with virtual access helping to bridge the barriers of distance.

The Children's Discovery Centre will create a shared environment, with direct public access ensuring the engagement of children and their families in a variety of learning experiences, both formal and informal. Virtual visitation using internet resources and social networking technologies will enable participation for a wide geographical audience. Teaching and research opportunities will also be possible through face-to-face as well as virtual access to this space.

Connections to early childhood services and community agencies will facilitate multi-directional interactions. Under the Early Start initiative, provision has been made by the University for each of the initial 38 participating early childhood centres to receive a 'package' consisting of video conferencing equipment and a range of interactive devices. These devices will directly benefit children in the centres, their families and staff. Through the connections that are provided between the University and the centres teaching and research in real life settings will be possible, providing authentic learning opportunities for students and researchers across many disciplines. In addition, opportunities for professional development with a focus on enhancing the practice of staff in these connected centres will be possible, as will improved connections between 'experts' in children's health, education and development and the families and communities involved. A pilot project involving a childcare centre

in the Wollongong area has already confirmed the effectiveness of this approach.

3. Innovative design features

Aesthetically pleasing spaces that inspire and support teaching, learning and research are design features both inside and outside Early Start's main building. In keeping with best practice, as suggested by the United Kingdom's 'Building Schools for the Future' project [5], the building is designed to stimulate 'new' ways of teaching and learning by providing spaces that allow "collaborative, multimodal learning, supported by ubiquitous access to mobile technologies" (p.3).

Formal, structured learning areas provide a contrast to the many informal learning and research spaces that are provided. Both types of spaces will adapt to individuals, small groups, traditional tutorial classes and large lecture cohorts. State-of-the-art technology, including video conferencing throughout the building, will enable the implementation of innovative teaching practices and accommodate research activities that extend well beyond the building itself.

There is a general consensus among designers that language influences how a 'space' or an 'object' is conceptualized. According to Fielding, Nair and Lackney (2005), a new lexicon is required to enable the conceptualization of new learning and new pedagogies [6]. Descriptors adopted in the Early Start facility reflect this view, with terms such as 'plaza', 'learning studio', 'discovery gallery' and 'education bridge' suggesting learning spaces that are engaging and exciting, encouraging activity and collaboration.

Accordingly, the building is divided into learning, research and community 'plazas' to cater for multi-modal experiences and to encourage collaboration. Horizontal 'bridges' provide a metaphor, physically as well as visually, for overcoming the traditional divide that can impede collaboration between students, researchers and the community. In addition, the deliberate design of the bridges and galleries allows for ease of physical movement within the building and a platform for viewing all that it includes. In essence, by connecting different areas of the building and encouraging interaction between its users, the bridges enable pathways for learning.

4. Shaping pedagogy across disciplines

The facilities that Early Start incorporates will allow students and researchers to observe individual

children, the interactions that occur between children, and the relationships that children share with adults. Interactive technologies that permit communication across a range of connected educational, community and research settings, both nationally and internationally, will enhance collaborative learning experiences with people of all ages and from many different backgrounds.

Through connections to early childhood services, schools and many other settings, students in different courses in the higher education sector will have reciprocal access to authentic activities involving children, their families and professional staff in many fields. In addition, these facilities will encourage collaboration across disciplines, enriching students' learning experiences and the practical outcomes of their activities.

Students enrolled in the Bachelor of Nutrition and Dietetics, for example, are required to cover four 'domains of practice' as part of their studies. In one domain, they must demonstrate skills in planning healthy eating programs for groups of clients, for example, a group with Diabetes II. The Health and Lifestyle Lab provides a useful venue for meeting with such a group and discussing general health concerns and how they may best be met. Alternatively, video conferencing provides a medium for connecting with a similar group at a distant site for the same purpose. The students can develop comprehensive plans to accommodate the typical needs of such a group as well as detailed plans tailored to individual needs. Demonstrations by students in the Food Skills Kitchen with a focus on designing menus and food preparation for groups on campus and those at a distance would also allow the participants to take a 'hands on' approach to preparing particular meals. For those on campus, a return to the Health and Lifestyle Lab once the food has been prepared would allow the students and participants to enjoy the fruit of their labours.

In the Bachelor of Education – Early Years course there is a focus on diversity and Curriculum Development and the way that each particular child's special needs can best be met. The students in this course may use observations recorded via connections to an Early Childhood Centre or to the Children's Discovery Centre and then analysed in the Interactive Research Hub as a basis for the production of a detailed report on how needs may best be met. Interviews with staff in the Centre or in person at the Early Start Facility in one of the Consulting Rooms may provide further insight into the child's circumstances. Students can use this information as a basis for designing learning experiences suited to the needs of a particular child, perhaps trialing these ideas and resources in the

Centre. Collaboration with parents and Centre staff can lead to productive learning experiences shaped to encourage the child's optimal development.

For students in the Bachelor of Social Work the focus may be on the development of counseling skills as a requirement of the course. Under an apprenticeship model, students may observe a qualified counselor interviewing a client either in a private Consulting Room or else via a connection to a community agency in a more remote area. These students may use their connections to distant sites to work on Problem Based Learning (PBL) modules that involve community members. Opportunities for more experienced students to demonstrate their skills, again in both locations and under the watchful eye of a counselor, will allow critical feedback from professional staff. The interaction itself as well as professional feedback enables the students to reflect on their approach to clients and the counseling skills they have developed.

Students at all levels, whether undertaking course work or involved in research activities, will have opportunities to engage with their peers, professionals in specialised fields and the broader community. Academics and researchers across the world will be able to access colleagues and collaborate in research endeavours within authentic community settings as well as at the University's Early Start Facility. The range of facilities that Early Start provides will encourage innovative ways of shaping pedagogies and research programmes based on real-world experiences. The opportunities for academic staff to be creative in their approaches to teaching and research extend well beyond any experiences that are currently available in Australia.

5. A blueprint for the future

The Early Start agenda is both innovative and ambitious. With connections from the main building in Wollongong to services across New South Wales and to partners in national and international institutions, Early Start promises to create a landscape for learning that is markedly different to the image we traditionally associate with higher education.

The virtual and physical spaces that are provided by Early Start will alleviate many of the conventional obstacles that may impede learning, instead encouraging collaboration between the undergraduate student and the researcher, the community member and the academic, the child and the wider world. In keeping with this view, Harris (2012) observes: "space is both a fixed and fluid notion . . . [which] . . . has an enormous impact on how we feel and think" [7]. The potential for

learning and for change at all levels is significant in an environment that stimulates intellectual curiosity, encourages social interaction and promotes a sense of community. The sheer vitality and fluidity of the 'space' that Early Start generates presents both a blueprint and a challenge for learning in the higher education sector.

6. Conclusion

Early Start will increase and enhance opportunities for student engagement at undergraduate and postgraduate levels. The content and scope of coursework subjects will be extended, allowing new patterns of study that are currently not available. In particular, opportunities for research pathways will open to students as the potential for international collaboration on projects concerning children's development becomes possible. Avenues of research concerned with children, their development, the wellbeing of their families and communities will build on the understandings we have now. For our most vulnerable children and families, this work is vital if we are to achieve the goals identified for Australia in the review of higher education conducted by Bradley and her colleagues in 2008.

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