The Design of Competency Based Learning Resources for VET Training Packages using learner centred, work centred and attribute focused simulation strategies

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Abstract

This paper provides an approach for incorporating simulation strategies into the instructional design of learning resource materials for the Diploma of Accounting. At present Vocational Education and Training (VET) in Australia is on the verge of the implementation of the "Six Major Areas of Action" work plan enunciated by the High Level Review (HLR) of the Training Packages. Action 2 of the plan focuses on better Training Package design specifying work performance, knowledge, skills and abilities as well as workplace simulation and participation. The primary purpose of simulation is to facilitate the development of competence where the learners do not have access to related workplace experience. The High-level review of the Training Packages has indicated that further research is needed into the use of appropriate pedagogies in teaching practices. Given that " the responsibility for translating Training Package requirements into teaching, learning and assessment strategies and programs is clearly that of VET providers", and Training Packages contain " a number of implicit pedagogical assumptions, and that "new requirements of the workplace, which suggest a pedagogical orientation that is more learner centred, work centred and attribute-focused" should be adopted. This paper proposes a model for addressing this identified need that incorporates learner-centred, work centred and attribute-focused simulation strategies to develop learner's competence. A preliminary model was designed at the Open Learning Institute (OLI) in Queensland and currently is being tested for its effectiveness in terms of competence development. An action research methodology will be used to review the preliminary resource model for potential improvements. It is argued that the resultant model will have applicability for other units of competence in VET Training Packages. An underpinning assumption of the research is that competence is a tri-dimensional concept comprising of knowledge, skills and performance. The research being undertaken aims to establish that the teaching practices that target the development of learner competence require suitable resources based on a new instructional design utilizing appropriate learner centred, work centred and attribute-focused simulations to make the integration of the three dimensions of competence a reality.

Introduction

The Key findings of 2004 Student Outcome Survey (NCVER) were published in a report in Campus Review titled "TAFE delivers on employability" on 8/12/2004. In this article Mr. Mark Gully, General Manager with the National Centre for vocational Education and Training Research (NCVER), referred to significant points, such as "*The survey results indicate the training at TAFE consistently delivers skills that increases graduates employability*", thus linking training to employability (Healy 2004).

The above report adequately demonstrates that most of TAFE graduates used training as a vehicle for employment reasons and this is perhaps why the recent report on employability skills and how to incorporate these skills in the training is crucial (Commonwealth of Australia 2002). The main purpose of this research is to develop appropriate resources to

assist the learners who undertake study for employment reasons in two phases. The first phase of the research has already been accomplished with the design of a preliminary instructional model for unit FNBACC05B titled "Establish and maintain Accounting Information System"

The Preliminary Model was developed as the learning guide for FNBACC05B unit of competency titled, "Establish and Maintain Accounting Information System" for the stage one of the research. The focus of the research in the next stage is to develop a model to assist the learners to develop competency by researching into the preliminary model based on the findings of the High Level Review of the Training Packages and other research works that would be applicable across units of competency in the Training Packages.

Pedagogical Confusions

The two environments of learning, i.e. on-the-job and off-the-job, introduced by VET Training Packages are not clearly defined, may overlap and their links to Training Packages and subsequently VET pedagogy are tenuous (ANTA 2003a). As a result of this ambiguity *"the transformation to Training Packages has increased the organizational complexity of the system"* (ANTA 2003a,p.13). Such a transformation in VET education has been a revolution however as ANTA (2004a,p.4) suggests," *a revolution might have been easier*". This revolution in VET education has created a host of confusions that are present in the current VET climate. This research is only concerned with the confusions of pedagogical nature. By exploring into the High Level Review of the Training Packages (HLR) a number of confusions have been identified as stated in the following extracts:

- *"We find an unacceptably high level of confusion amongst educators in particular about the relationship between Training Packages and teaching, learning and assessment. Even after six years, many do not seem to understand how Training Packages work, or how to work with them. This is a key issue that demands attention in order to achieve improvements in the quality of teaching, learning and assessment practice."(ANTA 2004a,p.5)*
- *"Many teaching and training staff are not engaged, and some still feel anger or confusion as a result of the implementation process".(ANTA 2004a,p.33)*
- *"Throughout this review we have been struck by the apparent confusion among users as to the purpose of Training Packages." (ANTA 2004a,p.14)*
- *"There is an unacceptably high level of confusion amongst educators in particular about the relationship between Training Packages and teaching, learning and assessment."* (ANTA 2004a,p.27)

"We see three main areas of confusion(ANTA 2004a,p.27) :

- *Misunderstandings about competency based training and its embodiment in Training Packages.*
- *Confusion between the specification of competence contained in Training Packages, the curriculum of its delivery (learning design) and resources to support teaching and learning.*
- *Confusion between curriculum and the methods of teaching (pedagogy)."*

Four types of confusions have been identified in the above references as follows:

Type A – Confusions arising from the concept of competence such as "*the specification of competence in Training Packages* "
Type B – Confusions arising from "*the relationship between Training Packages and teaching, learning and assessment*"
Type C - Confusions arising from and" *between the specification of competence in Training Packages, the curriculum of its delivery*" and "*Confusion between curriculum and the methods of teaching (pedagogy)*"
Type D – Confusions arising from how to create "*resources to support teaching and learning*"

Clearing the Pedagogical confusions

In the midst of these confusions that have overshadowed VET delivery in the recent past this research proposes the following definitions and models as summarized in the Table 1 in an attempt to alleviate the shadows of pedagogical confusions that have been affecting VET delivery:

Table 1 –Training Packages Pedagogy (Methods/Definitions)

Types	Pedagogical Confusions	Proposed & suggested Methods/Definitions
A	Confusions arising from the concept of competence	Redefinition of Competence
B	*"the relationship between Training Packages and teaching, learning and assessment"*	The Relational Model of Pedagogy for Training Packages
C	*Training Packages, methods of teaching pedagogy*	Pedagogical Simulation
D	*resources to support teaching and learning , the curriculum of its delivery and teaching*	Learner Centered, Work Centered Attribute Focused Resources based on a Flexible Curriculum

The remainder of this paper addresses the above definitions, models and methods as proposed and specified in Table 1.

Redefinition of Competence as a "Hands" and "Minds" equilibrium

The authors of 'Moving on' state *" If we are to improve the Training Package model, we will have to do more than re-affirm the existing assumptions about competence—we will have to think our way to conceptual and therefore policy clarity. Competence (and therefore competency -based training and assessment) appears on the surface to be a deceptively simple concept but, theoretically and in practice, that simplicity melts away to reveal conceptual complexity"(ANTA 2004a,p.16).* There are three essential dimensions of competence i.e. knowledge, skills, and performance as prescribed by the Units of Competency in the Training Packages.

This paper focuses on the understanding of how "*competence is conceptualised as being embodied in the hands and minds of individuals*"(ANTA 2003a,p.20). It is also important to

understand that "*competency is a broader concept than just the ability to perform workplace tasks*"(ANTA 2004a,p.16). Finally, the paper redefines competence in the lights of these assertions from High Level Review as a quality that needs to be developed by the learners both conceptually and physically. It needs to be conceptually developed in the minds of the learner based on the constituents of competence (underpinnings and attributes), and physically developed and perfected by performance (based on performance criteria) resulting in a balanced hands-and-mind's equilibrium.

The Relational Model of Pedagogy for Training Packages

However VET has witnessed that in the shadows of the confusions and the absence of a model of pedagogy for Training Packages High Level Review did present the OECD model of traditional pedagogy (ANTA 2003a,p.15) in which the learner, the teacher and knowledge are relationally located within the context of the three processes of learning, teaching and training (OECD 2003) . The (OECD 2003) report has further indicated that the use of pedagogical methods that are learner-centered and contextualized are more attractive to adults in the employment-related training. Thus High Level Review has provoked some pedagogical arguments leading to deeper insights and thus more clarity in Training Packages Pedagogy and these are answered in the following sections.

On the Job or Off the Job

It is concluded by High Level Review that "*VET programs are now delivered both on and off-the-job; by public, private and non-government providers; in workplaces and in classrooms; in schools, colleges and in-house; face-to-face, on-line and by distance*" (ANTA 2003a,p.13). This suggests that VET programs can be delivered either at workplaces or off the job hence pedagogical issues are also broadly two types: those related to learning in the work environment and those that occur in places other than the workplaces.

It should be acknowledged that accredited courses that are delivered outside of the Training Packages delivery still need to be continued (ANTA 2003a). In both cases the process of learning needs to take place in an environment such as workplaces for on the job training or institutes for off the job training and learning. (ANTA 2003a).

If in Training Packages context where "*Australian vocational programs leading to nationally recognized qualifications are delivered both on and off-the-job; (ANTA 2003a,p.10)" require work experience" (ANTA 2003a,p.20)*and *"Work experience, either real or simulated, is almost an obligatory feature"*(ANTA 2003a,p.36),the question remains as how such a dilemma can be solved with sound academic solutions. Perhaps as OECD (2003) opened the discussion by presenting the relational model of traditional pedagogy, referred above, that clarified many pedagogical issues and has contributed to pedagogical debate(Chappell 2003a), by introducing a Relational Model of Pedagogy for Training Packages as presented in this paper.

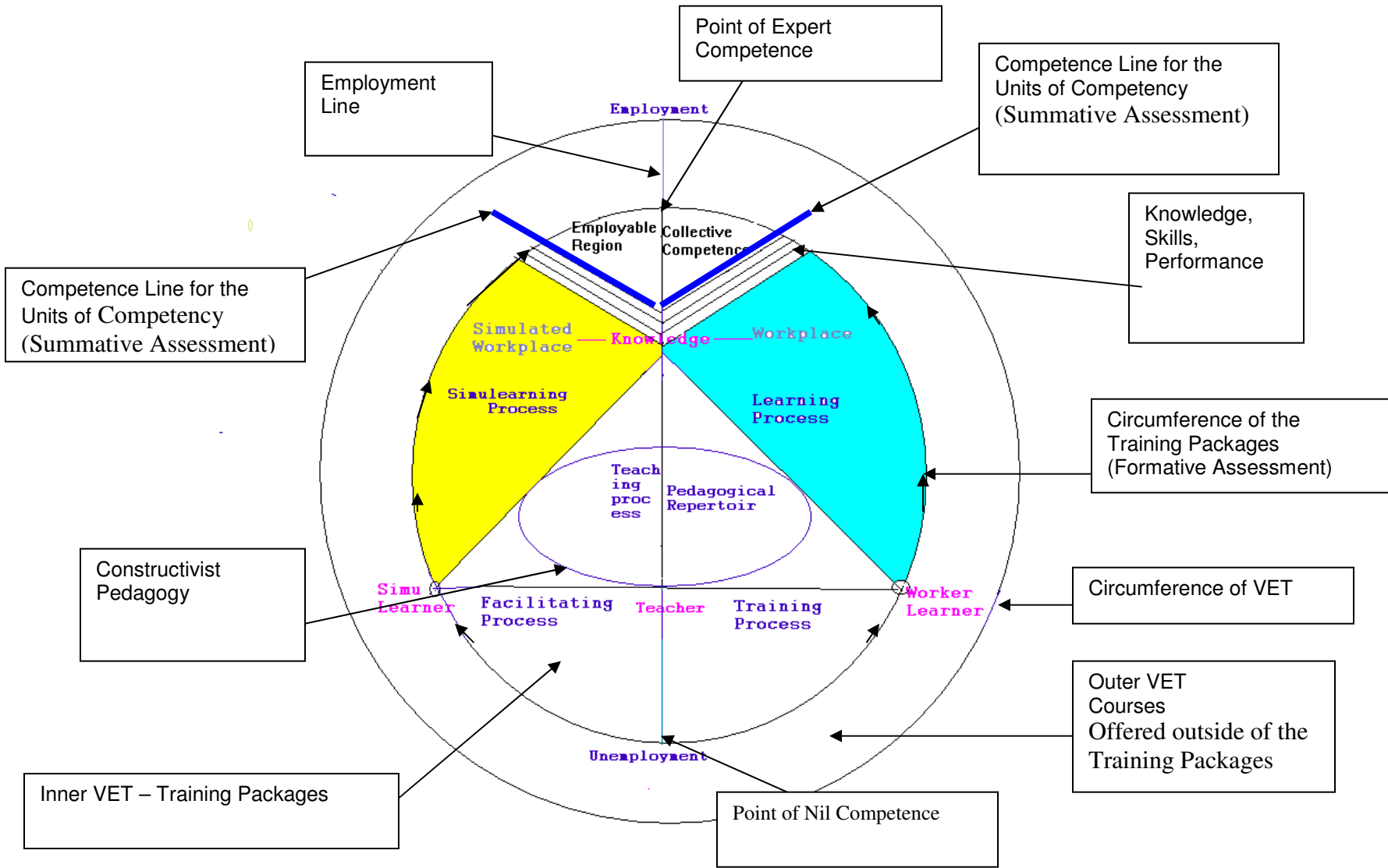*Training Packages and the dual origins of learning*

It is firmly established that, "training and assessment can occur on or off the job; in the workplace or in an institution with simulated or actual workplace experiences"(ANTA 2003b,p.4) Given that, Training Packages can be considered to have the following attributes. *"Competencies can be developed and assessed directly in the workplace, as well as through workplace simulation, for example through Practice Firms(ANTA 2003b,p.4). Support enterprise based training and assessment in workplaces as well as institution based training with workplace simulation"(ANTA 2003b,p.10)* " and contain *"Work experience, either real or simulated, as an obligatory feature*"(ANTA 2003a,p.36). This paper proposes a relational model of pedagogy that incorporates both on the job (workplace) and off the job such as (simulated workplace) learning environments on the basis of the three processes of teaching, training and learning(OECD 2003).

Given that there are two broadly defined origins of learning within the Training Packages context from which the development of competence is derived and originated and in which assessment can take place i.e.,*"workplace" based and "institution based with workplace simulation",* this paper suggests that a model of pedagogy will assuredly clears many ambiguous questions arising from these confusions such as *"the relationship between Training Packages and teaching, learning and assessment".*

The changes in economy has resulted in a number of challenges for VET such as the emergence of a new type of learner the "worker-learner"(ANTA 2003a,p. vi), who learns on the job and through work. ANTA (2003a) asserts that *"Learning through work is what most workers nominate as the most important contribution to their learning. Indeed the new worker-learner has emerged as a major focus of the research* "(ANTA 2003a,p.vi).
 On the other hand there are the learners who are developing competence outside the ambit of work places and are learning through simulations provided by the training institutes(ANTA 2003a). Given that learning through simulations is the alternative to learning through work and that simulations include the activities, case studies, project work as well as simulated workplaces(Moy, et al. 2000) (Elgood 2000) in some institutes. This research has identified a second type of new learners within the training packages context called "simulearners" who learn through simulations such as activities, case studies, project work and simulated workplaces. This research proposes the Relational Model of Pedagogy for Training Packages on the following precepts:

- There are two environments of learning in the context of the Training Packages, workplace and simulated workplace

- In the simulated workplace the learners are called simulearners since they are learning in a simulated world, while the learner in the workplace is a worker learner as he/she is learning in the real world. Simulearning includes all the work-related learning outside of the workplaces ambit.
- The relational positions of the three processes of leaning, teaching and training are furthered by inclusion of simulearning and facilitating processes.

Point of Expert Competence

Competence Line for the Units of Competency (Summative Assessment)

Employment Line

Knowledge, Skills, Performance

Competence Line for the Units of Competency (Summative Assessment)

Employment

Employable Region Collective Competence

Simulated Workplace — Knowledge — Workplace

Simulearning Process

Learning Process

Circumference of the Training Packages (Formative Assessment)

Teaching process Pedagogical Repertoir

Constructivist Pedagogy

Simu Learner Facilitating Process Teacher Training Process Worker Learner

Circumference of VET

Outer VET Courses Offered outside of the Training Packages

Inner VET – Training Packages

Unemployment

Point of Nil Competence

The Relational Model of Pedagogy for Training Packages

- In the Training Packages learners move away from unemployment (nil competence) towards stable employment (individual and collective competence)
- The focus of the Inner VET is on Training Packages while the focus of the outer VET is on courses other than Training Packages.

Pedagogical Simulation

As ANTA (2003a) asserts, *"There are simply not enough suitable workplaces that can provide links with educational institutions"* (ANTA 2003a,p.36) This assertion suggests that not only some learners may not have access to workplaces but in addition the institutions also may not be able to provide a workplace experience for these learners. But on the other hand ANTA (2003a) has established that using Training Packages "work experience, either real or simulated, is almost an obligatory feature"(ANTA 2003a,p.36). If work experience, either real or simulated is an obligation under Training Packages requirements then using simulation remains the most appropriate alternative to workplace experience for the learner. It would appear that there is a need for a pedagogic tool to be constructed as a vehicle to integrate the three dimensions of competence utilizing a "learner-centered, work-centered and attribute-focused approach"(ANTA 2003a,p.19) to pedagogy using constructivist pedagogical strategies(ANTA 2003a,p.vii). A pedagogic tool that has an integrative capability as a catalyst of physical action and mental reflection (ANTA 2004a). However, before the principles of pedagogic-simulation are discussed to further confirm this viewpoint it is appropriate at this juncture to examine the definition of simulation.

Definition of Simulation

Elgood (2000) asserts that simulation is a title used for training material "that can equally well be described as 'game', 'exercise', 'activity' or 'structured experience'". This suggests that simulation is a strategy used in training materials that can take different forms such as games, exercise, activity and so forth. With the advent of Training Packages and stronger focus on workplace performance there have always been a particular emphasis on simulation and its benefits to enhance learning(Moy, et al. 2000). Most of the Training Packages state that the assessment of competence should take place in a workplace or a simulated work environment. In the context of the training packages the simulation can be defined as: '*Activities that aims to reflect the complexity of workplace, and are used to assess performance against units of competence*"(Moy, et al. 2000,p.11).

Simulation for Training Packages

Simulations can be viewed in two broad ways: a "representational" view and "reality" view of simulation(Crookall 1988). While representation perspective view simulation as the representation of some "worldly reality" the reality perspective considers simulation as operating realities in their own right(Crookall 1988). As the "Pedagogical Simulation" aims at simulating workplaces it is viewed as being a representational perspective (Crookall 1988) of the real workplace. However, once used by the learner, it may be viewed as

becoming a reality of its own. Moy, et al. (2000,p.17) suggested eight possibilities in the use of simulation by TAFE NSW that are hierarchically arranged as follows:

- Actual trading businesses operated by TAFE NSW sections
- Simulation activities that provide actual products or services but do not trade
- Simulated businesses, trading in a simulated environment
- Model workplaces
- Technology assisted simulations
- Case study scenarios
- Structured role play of work situations
- Practical tasks

The first three simulation possibilities are more likely to meet the requirements of the Training Packages "*where assessment of competence may occur in a workplace or simulated workplace*"(Moy, et al. 2000,P 17). This research mainly utilized case study scenarios and structured role-play for the development of the Preliminary Model. However to meet the Requirements of the Training Packages for the next Model, the research intends to explore into constructing a pedagogical simulation with the following characteristics:

Integrative Characteristic

The pedagogical complexity created by the introduction of performance into teaching practices (ANTA 2004a) requires a full transformation of these practices. New ideas such as pedagogical simulation promote learning strategies and practices that integrate work and learning (ANTA 2003a) through simulation that provide opportunities for learners to integrate domain knowledge, required skills and attributes in performance. This suggests that the move to training packages being more than a revolution (ANTA 2004a,p.4), and is transforming teaching practices, pedagogy and the learning resources equally. In other words this revolutionary transformation in teaching practices requires new thinking and new tools. Tools that are capable of integrating the dimensions of competence in a balanced hands and minds equilibrium by the learners (ANTA 2004a) based on learner centred work centred and attribute focused (ANTA 2004a) principles. The Pedagogical Simulation is such an integrative tool. ANTA's advice to Training Package developers and Assessment Guidelines of various Training Packages (Moy, et al. 2000,p.11) also states that "*Simulation must provide opportunities for integrated assessment of competence*" *which* should be considered in the construction of "Pedagogical Simulation" to include*:*

- *Performing the task (task skills)*
- *Managing a number of tasks (task management skills)*
- *Dealing with workplace irregularities such as unexpected problems, breakdowns and changes in routine (contingency management skills)*
- *Fulfilling the responsibilities and expectations of the job and workplace, including working with others (job/role environment skills)*
- *Transferring competencies to new contexts."*

Instructional characteristic

Crookall (1988) asserts that a type of simulation called"instructional simulation' can be built on the basis of learning objectives or outcomes with a focus on teaching facts, knowledge and skills. This suggests that instructional simulations can be constructed as a tool to develop competence in the learners and thus simulation has an instructive capability. This research intends to use the instructive capabilities of simulation that are evolving overtime and becoming more creative, sophisticated and diverse (Moy, et al. 2000).

Catalytic characteristic

The other capability of pedagogical simulation is that it works as a catalyst of physical action and mental reflection which are inseparable for active construction of meaning (ANTA 2003a) that are needed for the development of competence based on the premise that competence is conceptualised as "*being embodied in the hands and minds of individuals*"(ANTA 2003a,p.20). Hence the first stage in the simulearning process is mental simulation as Perkins and Unger (1999,p.96) assert "*research findings support the idea that mental models or schemata are important for many kinds of understandings.*" Perkins and Unger (1999,p.96) further argue that "*mental models are often runnabe and enable mental simulations that aids in generation of predictions and plans of action*" For these reasons mental simulations will be incorporated as the necessary and the most important component of the pedagogical simulation in this research.

Constructivist characteristic

The pedagogic simulation is a vehicle that is controlled and run by the learner where problem drives learning (Jonassen 1999), in which the learners in their search for a solution attain the relevant domain knowledge (Jonassen 1999) in "*active construction of meaning*" for themselves(Chappell 2003a,p.3). As Chappell (2003a,p.3) argues "*Much of adult learning, experiential learning, problem and project-based approaches base teaching and learning practices on constructivist theory*".

The use of LWAR (Learner centred, Work-centred and Attribute-focused Resource)

The current paradigm of education and training is changing from "advancement of the fittest" to the "advancement of all", from "standardization" to "customization", from "teacher-directed" to "student-directed" which means "the paradigm of the instruction has to be changed:" into a "learning focused paradigm"(Reigeluth 1999,p.19). In the new paradigm Reigeluth (1999,p.19) asserts that the teacher's role is changing to "a guide on the side" rather than "a sage on the stage". He further argues that if the role of the teacher who was once the agent of learning has been changed to a facilitator, then who would be the agent of learning? He then provides the answer as follows(Reigeluth 1999,p.19): "*Well-designed resources are one, and instructional design theory and instructional technology can play particularly large roles in developing these resources*".

Also Reigeluth (1999) refers to problem-based learning, project-based learning, simulations, tutorials and team-based learning as recommended approaches that learning-focused theory might encompass. Darwin (2004,p.3) refers to the change to the new paradigm as the end of 'conventional' instructional design that was "*generally behaviorist*

cognitivist in emphasis, highly linear in form, abstracted from teaching/learning process and grounded in systematic rigidity" and that "*understanding of effective learning has changed with emerging consensus around constructivism*"

As in constructivism it is the problem that drives the learning. Therefore by using constructivist pedagogy the learning becomes project-based or problem-based learning (Jonassen 1999) where learners manage and think as practitioners (Williams 1992). This research aims to explore into project-based approach that drives learning by creating a simulated accounting firm in a simulated environment. In such an environment the learners acquire and develop project cases that are sequenced in complexity from "*engaging in peripheral activities through to increasingly complex tasks*" (Billett 1996,p.50). The acquisition of the problem in the process is necessary in order to create a sense of ownership among learners. As Jonassen (1999,p.219) asserts that "*the key to meaningful learning is the ownership of the problem*" and "*without the ownership of the problem the learners are less motivated to solve it*". The emerging resource would cover the three components of constructivist approach to instructional design as explained by Jonassen (1999) i.e., problem context, problem representation or simulation and problem manipulation space in the following ways :

Problem Context

The problem context in which the simulated businesses in the practice firms occur will be provided to learners at the beginning. This will include all the contextual features surrounding businesses that operate in the Practice Firms as well as physical, organizational and socio-cultural contexts within which the practice firms operate. In addition all the resources that the businesses have such as financial reports and financial statements will be checked to ensure that they are provided to the learners. According to (Jonassen 1999) the learners should also have access to the community of practitioners. The issue of the community of practitioners is not yet resolved at this stage of the research and is one of outstanding issues that need to be explored on the ground of finding a clear pedagogical strategy. However the research is exploring the possibilities of engaging the Accounting Bodies in Australia to set up a framework for the contextualization of learning for Financial Services Training Package.

Problem Representation/Simulation

"*An essential part of problem representation is a description of the context in which it occurs*" (Jonassen 1999,p.221) *such as physical, organizational, and socio-cultural. The* mere engagement of the learners from the start in a simulated environment and working with a simulated accounting firm to document and develop a project appeal to learners because it is interesting, appealing and engaging.(Jonassen 1999)

Problem Manipulation Space

According to Activity theory to ensure learners engage in meaningful activities is to create an environment (space) that they can manipulate something such as constructing a product or even decision making(Jonassen 1999) Again the learners assume the ownership of the problem if they are allowed to manipulate and affect the problem in a meaningful

way(Jonassen 1999). The purpose of using a simulated accounting firm is to provide ample manipulation space for the learners who can affect the problem in any way that assist them to construct meaning for themselves. All the tools, resources, equipment or objects that facilitate the manipulation and decision-making will be provided in the manipulation space. The LWAR resource will be developed on the learner centered work centered and attribute focused concepts as a three parallel threads (Chappell 2003a). To place the simulearner at the centre means that the simulearner will be in control and will drive his/her own learning.

Proposing the Flexible Learner Centered Curriculum as the basis for VET teaching

In the new paradigm the problem drives learning hence the curriculum of its attainment given that "*learning is equated to the process and outcomes of participation in goal-directed activity, with social situations and circumstances influencing the nature of the activities*"(Billett 1996,p.43) and the "*activities being advanced as the key components of the curriculum model*"(Billett 1996,p.43). This suggests a flexible curriculum that is learner-centered work centered and attribute focused tailored to the learning goals. The proposed flexible curriculum fits with the structure of the units of competency and is customized to the learner and/or workplace needs. In this model of Flexible Learner Centered Curriculum the learner being at the center defines his/her own curriculum and plans his/her own learning. This significant change is needed in teaching practices for VET delivery of the Training packages. The flexible curriculum is developed by the learners based on the basis of the problem, case study or project, on the premise that the problem drives learning and is the basis in the new LWAR resource. Therefore the proposed LWAR resource is constructed on the basis of flexible and learner centered curriculum using cognitive apprenticeship, "*constructivist method for helping novices to acquire expertise*"(Kerka 1997,p.2), in a situated learning where "*knowledge is created and made meaningful by the context in which it is acquired*" (Farmer Buckmaster and LeGrand 1992, P 46).

Conclusion

This research has explored into the pedagogical confusions that are present in the implementation of VET Training Packages. In an attempt to clear the confusions the research has redefined competence and proposed the Relational model of Pedagogy for the Training Packages on the grounds that without a clear definition of competence it would be difficult for VET teachers to assist learners to develop it and without a model of pedagogy the Training Packages implementation is not an easy task. The research also suggested that a pedagogical simulation as an integrative, constructivist and instructive tool that is a catalyst of physical action and mental reflection is necessary for teaching practices within the Training Packages context. Finally the research proposes that an LWAR resource based on a new flexible curriculum need to be developed. In this approach not only the learners take the ownership of the problem but also take the ownership of the learning process because they will not only document and develop their own problem case but will also design their own learning program. This approach is based on the constructivist pedagogy to learning where the key to the learner's achievement is the ownership of both the problem and learning.

Bibliography

ANTA (2003a). High Level Review of Training Packages Phase 1. the High Level Review of Training Packages. K. S. R. McDonald, Australian National Training Authority.

ANTA (2003b). High Level Review of Training Packages Phase 2. the High Level Review of Training Packages. K. S. R. McDonald.

ANTA (2004a). Moving on (Phase 3)...: report of the high level review of training packages / [Kaye Schofield and Rod McDonald]. Brisbane, ANTA Australian National Training Authority.

Billett, S. (1996). "Towards a model of workplace learning: the learning curriculum." Studies in continuing education **18**(1): p. 43-58.

Chappell, C. (2003a). Changing pedagogy: issues for contemporary pedagogy / Clive Chappell. [Sydney], University of Technology, Sydney. Australian Centre for Organisational, Vocational and Adult Learning. (OVAL Research)**:** 15 p.

Commonwealth of Australia (2002). Employability Skills for the Future, Commonwealth of Australia,**:** 55.

Crookall, D., Ed. (1988). Simulation - Gaming in EDucation and Training. Proceedings of the International Simulation and Gaming Association's 18th International Conference, Pergamon Press.

Darwin, S. (2004). The teacher as instructional designer: from standardising to customising / Stephen Darwin. TAFE Queensland Centre for Innovation and Development Beyond the Break Conference (2004 : Brisbane), ,.

Elgood, C. (2000). "Simulations: what they contribulte to training programes." Training Journal: p. 22-25.

Farmer Buckmaster and LeGrand, B. (1992). ""Cognitive Apprenticeship."" NEW DIRECTIONS IN ADULT AND CONTINUING EDUCATION no. 55 (Fall 1992): 41-49. (EJ 456 732)((Fall 1992)): 41-49.

Healy, G. (2004). TAFE delivers on employability. Campus Review**:** 8.

Jonassen, D. (1999). Designing Constructivist Learning Environment. Instructional Design Theories and Models, Volume II, A New Paradigm for Instructional Theory. C. Reigeluth, University od Indiana, Lawrence Erlbaum Associates. **2:** 715.

Kerka, S. (1997). Constructivism, Workplace Learning, and Vocational Education. ERIV. Columbus OH, ERIC Digest No. 181.

Moy, J., , et al. (2000). Creating valid and cost effective simulated learning and assessment environments in TAFE NSW: project report / Janelle Moy, Marianne Courtenay and Carmel Spark. Sydney, TAFE NSW Commission.

OECD (2003). Beyond Rhetoric; Adult Learning Policies and Practices. Paris., OECD.

Perkins and Unger (1999). Teaching and Learning for Understanding. Instructional Design Theories and Models, Volume II, A New Paradigm for Instructional Theory. C. Reigeluth, University of Indiana, Lawrence Erlbaum Associates. **2:** 715.

Reigeluth, C., University od Indiana (1999). What Is Istructional-Design Theory and How Is It changing? Instructional Design Theories and Models, Volume II, A New Paradigm for Instructional Theory. C. Reigeluth, University of Indiana, Lawrence Erlbaum Associates. **2:** 715.

Williams, S. (1992). "Putting Case-based instruction into context:Examples from legal and medical education. Journal of the Learning Sciences." Journal of the Learning Sciences **2**(4): 367-427.