

# EMBEDDING ACADEMIC LITERACY SKILLS INTO THE MAINSTREAM CURRICULUM: THE CASE OF INFORMATION SYSTEMS 131/132

L. NDESI, L. KIMANI, N. LATIEF & V. MCGHIE  
UNIVERSITY OF THE WESTERN CAPE

## Abstract

This paper reports on collaborative teaching between two academic literacy (AL) specialists and two lecturers teaching first-year students Information Systems (IFS) 131/132 during the 2012 and 2013 academic years in the Faculty of Economic and Management Sciences at the University of the Western Cape. The aim of the collaborative teaching was to embed AL skills into the first-year IFS curriculum in order to ensure that the transfer of skills was taking place effectively. The objective was to determine whether the skills taught were enabling the students to pass their IFS modules well, thereby ensuring access for success. The theoretical framework used in this paper draws on Barton's 'ecology' approach to literacy and learning; the social learning theory of Wenger; and the views of Bransford, Brown and Cocking on how people learn and transfer knowledge.

**Keywords:** Academic literacy, collaborative teaching, embedded approach, first-year students, Information Systems, successful learning.

## 1. INTRODUCTION

Two academic literacy (AL) specialists in the Faculty of Economic and Management Sciences (EMS) at the University of the Western Cape (UWC) have worked collaboratively and closely with first-year lecturers in the different departments since 2006. Collaboration was deemed important because the two specialists wanted to embed the AL skills into the curriculum of the discipline-specific modules in the faculty (Chanock, Horton, Reedman & Stephenson, 2012; Hillege, Catterall, Beale & Stewart, 2014; Van Schalkwyk, 2008). Thus, the aim of this article is to report on collaborative teaching between the two AL specialists and two lecturers teaching first-year students IFS 131/132 over a period of three academic terms, from 2012 (second semester) to 2013 (both semesters).

The academic course, Introduction to IFS 131/132, introduces students to the fundamental concepts, theories and principles of IFS. It is a compulsory first-year module for all new undergraduate students in the faculty. However, students from the other faculties at UWC (Arts, Science, Community and Health Sciences, Law and Education) also register for at least one first-year IFS course.

The course examines what is done with technology in the world, why organisations choose to use it, who is affected or interested in its uses and how it is organised in order to obtain the best return on investment (ROI). The course goes further, beyond questions of what Information and Communication Technologies (ICTs) are used for, to questions about the consequences that follow. These are often spoken of as the 'so what?' questions in the field of IFS (Stair & Reynolds, 2014).

The IFS field is characterised by change and dynamism. Unlike many other academic disciplines, the rate of change in this field is extremely fast. Moreover, the rate at which technologies are changing is quite rapid. As a consequence, many academic theories, views and commercial practices also have to be revised on an almost annual basis (Eccles, Jane, Nash & Van Belle, 2003; Gourova, Antonova & Nikolov, 2006). The continuing revision of theories and body of knowledge often has a confusing effect on first-year students with and without prior IFS backgrounds. In addition, IFS is a purely content-based course designed to acquaint students rapidly with computer and business terminologies. The focus, therefore, is not on language development and academic literacy (Jacobs, 2010).

Similar to IFS, the Academic Literacy for Commerce (ALC) module is also a compulsory first-year course in the faculty. The primary aim of the ALC course is to induct the students into the 'ways of being' in academia in order for them to be successful in the learning process (Boughey, 2009). The course is designed and structured around the AL needs of the different content-specific departments. The content of the course covers group dynamics, critical thinking and problem solving, reading for academic purposes, writing for academic purposes, report and summary writing, and referencing and plagiarism among others.

AL skills are needed for students to interpret and use a wide variety of information for problem solving, analysis, making connections, and understanding how the field of IFS is structured (Andrews & Higson, 2010; Shah, 2008). In addition, the skills that students need to be successful in the 21st century do not only include IFS, but also high-level oral and written communication skills and the ability to work collaboratively in teams (Du Toit, Erasmus & Strydom, 2009; Zygouris-Coe, 2012). Based on the above, the IFS lecturers became aware of a number of shortcomings within the course that were impeding students' development and understanding of IFS. Students tended to rely heavily on the internet to obtain information for assignment work and they made minimal attempts to integrate information from numerous sources in their work. Also, there was a relatively low level of critical thinking evident in students' work and this resulted in poor learning experiences for students.

A further challenge arose in that the IFS lecturers thought that students were fully equipped with the necessary AL skills and if they were not, they had to find a way of coping with this or they had to consult the AL lecturers for assistance. This assumption prompted different forms of challenges for both students and lecturers.

As a result of the feedback received in one of the collaborative meetings in 2009, the lecturers realised that closer cooperation between the two disciplines was needed in order to overcome the challenges that the IFS students experienced. It was clear that the AL skills taught needed to be fully embedded into the IFS curriculum. This view is in line with literature that promotes embedding AL skills into the mainstream curriculum (Black & Rechter, 2013; Boughey, 2009, 2013; Hillege et al., 2014; Jacobs, 2005, 2010; Lea & Street, 1998). Jacobs (2010), for example, supports the views of Geisler (1994) that disciplinary discourses of knowledge have a tacit dimension, which creates difficulties for the experts in articulating certain concepts, and also results in challenges for the students in understanding and learning. Geisler proposes that there are two dimensions of disciplinary knowledge: 'domain content' and 'rhetorical process', and he describes 'rhetorical process' in the same way that Gee (2008:155) defines it, namely "...a socially accepted association among ways of using language, of thinking, feeling, believing, valuing, and of acting that can be used to identify oneself as a member of a socially meaningful group". Thus, proponents of new literacy studies assert that literacy practices and discourses of academic disciplines are best acquired by students when embedded within the contexts of such disciplines (Gee, 1996, 2008; Mckenna, 2004; Street, 2003, 2005; Volbrecht & Boughey, 2004).

The objective of the article is two-fold. The team wanted to ascertain whether or not students transfer the AL skills taught in ALC to IFS; and to determine whether the skills taught in ALC were enabling the students to pass their IFS modules well. Three questions guide the discussion in this article, namely:

1. *What type of AL skills was needed in IFS?*
2. *How were the students assisted with transferring the skills taught in ALC to IFS?*
3. *Did the transfer of skills enable the students to pass their IFS modules well and did the overall pass rate increase?*

What follows first is a discussion on the theoretical framework used in the study; thereafter, there is a description of the process followed (methodology); and then the focus is on the interpretation and the understandings that emerged from the analysis of the students' formative and summative assessment marks. The article concludes with a synthesis of the findings and recommendations for higher education institutions based on what was learnt from the infusion of the AL skills into the IFS course.

## 2. THEORETICAL FRAMEWORK

The theoretical framework used in this article draws on Barton's (2007) 'ecology' approach to literacy and learning; the social learning theory of Wenger (1998); and the views of Bransford, Brown and Cocking (1999) on how people learn and transfer knowledge.

Barton's (2007: 34–35) 'ecology' approach to literacy and learning takes into account that literacy is a social activity; there are different literacies which people make use of and these are situated in broader social relations; literacy acquisition is based on a system of symbols and is part of people's thinking processes; people have awareness, attitudes and values with respect to literacy and these attitudes and values guide their actions; and literacy events have social histories because current practices originated from the past. Barton (2007) further states that an ecological approach to literacy begins with people's everyday activities and these activities are constructed by their literacy events and literacy practices in the environment in which people function. His views are in line with new literacy theorists such as Gee (1996, 2008) and Street (1995, 2003, 2005).

Wenger (1998: 4) argues that “human beings are social beings and this fact is a central aspect of learning”. His social theory of learning is based on four components – “learning as belonging, learning as becoming, learning as experience, and learning as doing” (Wenger, 1998: 4). He explains that these components “are deeply interconnected and mutually defining” and that is why he uses the concept of “communities of practice” (Wenger, 1998: 5). He further explains that the concept of “communities of practice” includes, firstly, meaning making, which is a way of talking about our (changing) abilities (individually and collectively) to experience our lives and the world as meaningful. Secondly, it includes “practice”, which involves the shared historical and social resources, frameworks, and perspectives that can sustain mutual engagement in action. Thirdly, “community” entails talking about the social configuration in which our enterprises are defined as worth pursuing and our participation as competent. Lastly, the concept of “community of practice” includes identity, which indicates how learning changes who we are, and how we create personal histories of becoming in the context of our communities (Wenger, 1998: 5).

Bransford et al. (1999) describe concepts of learning under five areas based on research generated in the last 30 years. These five areas are: memory and the structure of knowledge; analysis of problem solving and reasoning; early foundations, metacognitive processes and self-regulatory capabilities; cultural experience; and community participation. They explain that initial learning is necessary for transfer; transfer is best viewed as an active, dynamic process rather than a passive end-product of a particular set of learning experiences; and all new learning involves transfer based on previous learning – this fact has important implications for the design of instruction that helps students learn (Bransford et al., 1999).

These theories embrace the fact that learning is socially situated and constructed, and they complement one another. They are also in line with collaborative learning principles, which hold that knowledge is co-created and shared (Panitz, 1999; Zhu, 2012; Zygouris-Coe, 2012). As such, these theories were deemed suitable for use as the theoretical framework for the data analysed in this article.

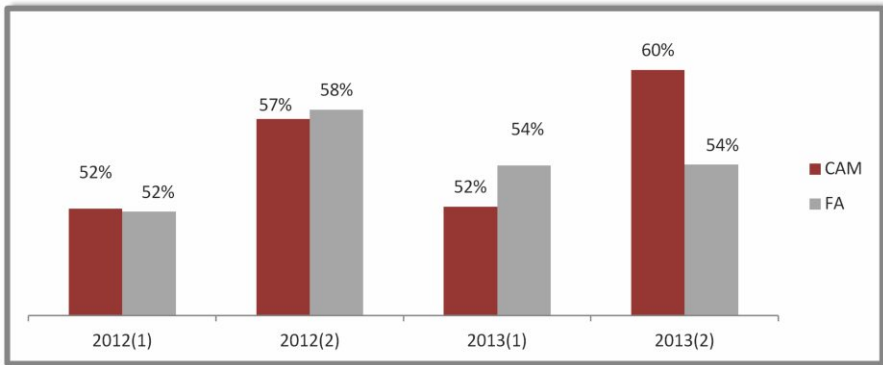
### **3. METHODOLOGY**

A case study design was used for the investigation. A case study design forms part of qualitative research as it allows researchers to conduct a comprehensive examination of a particular issue (Schrank, 2009; Yin, 2009). Stake (1995: 23) explains that a case does not have to be an individual "...it can be whatever 'bounded system' is of interest – an institution, a programme, a population can be a case". In addition, both Stake (1995) and Babbie and Mouton (2001) explicate that case studies help to reveal that which is not known in a unique way. For these reasons, a case study design was deemed appropriate.

The case consisted of all the EMS students who were registered for IFS 132 (229 students) in the second semester 2012, and all the students who were registered for IFS 131 (656 students) in the first semester 2013, and IFS 132 (463 students) in the second semester 2013. Thus, a convenient sampling method was used. The students' formative and summative assessments in the IFS courses over the three semesters made up the data that was collected and analysed. The formative assessment tasks included four tutorial exercises, four quizzes, two tests, a group assignment and an individual assignment as a major assignment in each semester. (The IFS lecturers, in an effort to enhance the higher-order learning skills of the students, increased the formative assessments and that is why there were so many). The summative assessments were the final examination written at the end of each semester. It should be noted that students from four other faculties also registered for IFS 131 and 132 but their results were removed from the data because this article reports on the progress of the EMS students only.

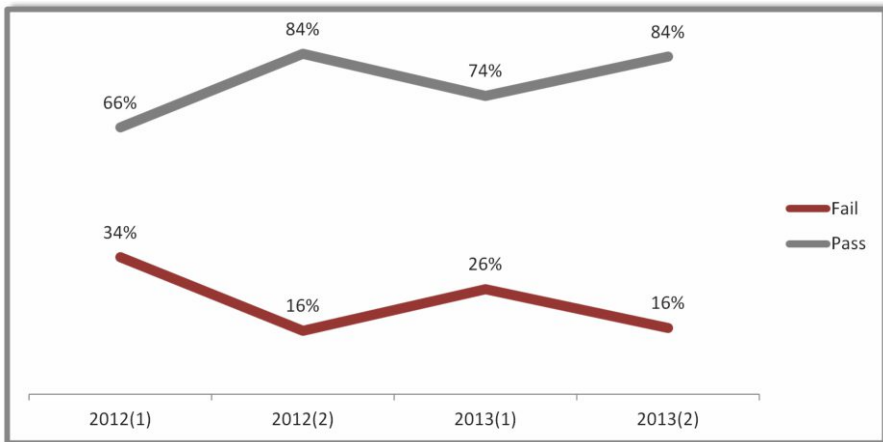
### **4. DATA ANALYSIS**

Because we wanted to determine if the students had transferred the AL skills taught in ALC to IFS; and whether the skills taught in ALC were enabling the students to pass their IFS modules well, the students' formative assessments during the course of the semesters were analysed, as well as their summative assessment at the end of each semester. The analysis was done on three spreadsheets in Excel. The students' formative assessment marks were extracted from the student management system by the two IFS lecturers and copied into the first spreadsheet, and thereafter, a percentage average for each semester's final semester mark (CAM) and final assessment mark (FA) mark was calculated. Graph 1 reflects the results.



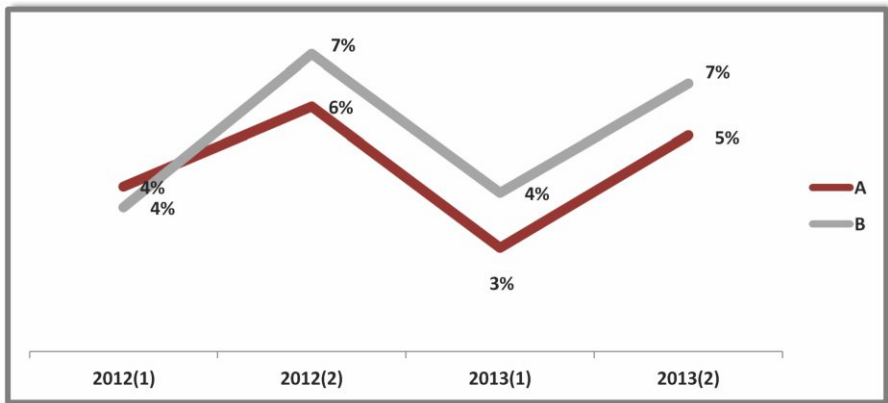
**Graph 1:** Students' average percentages - CAM (semester mark) and FA (exam mark)

The second spreadsheet was used to combine the CAM marks and the examination marks for each semester in order to arrive at the students' final marks. This was done to determine the pass and failure rates per semester. Graph 2 represents the pass and failure percentages across the four semesters.



**Graph 2:** Students' final pass and fail percentages

The third and final spreadsheet was used to sort and group the final marks as symbols in order to determine if the number of students passing with a B or A symbol had increased. This is illustrated in Graph 3. The data on the Excel spreadsheets was verified against the original data on the student management system in order to ensure that the calculations were correct.



**Graph 3:** Percentages of students who obtained A & B symbols

## 5. DISCUSSION

The first question in the introductory section speaks to the type of AL skills that were needed in the IFS courses. The students needed the ability to decode instructions and questions given in assignments, test and examinations; therefore, they needed analytical and critical-thinking skills. They also needed comprehension and critical-reading skills in order to identify the main and support ideas in the case studies in IFS; and reasoning and summary-writing skills in order to explain and compare the issues discussed in the case studies. Furthermore, critical and analytical thinking and problem-solving skills were needed for the assessment tasks that required them to give definitions, provide explanations and interpret visuals. They needed the ability to critically analyse constructs such as distinguishing between concepts, identifying cause and effect, as well as forming conclusions and evaluating information in groups. Lastly, they needed to know basic research skills in order to use credible and reliable sources for gathering factual information and as evidence for their arguments. They also needed to know about plagiarism and how to acknowledge researched information through in-text and end-text referencing.

The second question asks: How were the students assisted with transferring the skills taught in ALC to IFS? A detailed explanation of how this was done is presented below.

The AL specialists and lecturers started to plan the collaborative teaching at the end of 2011 and met regularly throughout the 2012 academic year in order to monitor the progress and to ensure that everything worked as planned. The planning included a synchronising of the module outlines in both ALC and IFS, a synchronising of the weekly module schedule for both ALC and IFS, and an activity sheet in which the different due dates and feedback meetings were mapped out.



Thus, we started the collaboration on a lecturer's level in order to create an enabling and collaborative learning environment for the students (Panitz, 1999; Wenger, 1998; Zhu, 2012).

The first phase of this collaborative effort was rolled out in the second semester of 2012, in the IFS 132 module and it entailed group work and a joint assignment (an academic essay). It was decided that the AL specialists would scaffold the tutorial exercises with the students in the ALC tutorials (decoding the instructions, analysing case studies in groups and identifying the main ideas discussed) in preparation for the content of the essay, and that the students would submit a first draft to the AL specialists in order to receive remedial feedback. They could use this to improve their work before a final copy of the essay was submitted to both the AL specialists and the IFS lecturers. The AL specialists marked the essay for structure, language, overall coherence and the use of quotations and referencing, while the IFS lecturers marked the content of the essay. A mark allocation of 50 was given to each part and the final mark out of 100 was a combination of the two marks.

Phase one was challenging. One of the challenges was that there was a lack of support and buy-in from key people such as the module co-ordinator and administrator, which also caused logistical confusion among students. Due to the number of students in the course, too much energy was exerted on this dual-essay submission, which was only one of the formative assessments. Furthermore, this initiative was the first of its kind in the EMS faculty and hence there were no benchmarks to which the lecturers could refer to for guidance.

The AL specialists and IFS lecturers went back to the drawing board to see how the collaboration could be improved. This gave way to phase two of the partnership, which is herein referred to as the 'embedded approach'. This meant that the ALC syllabus would become seamlessly embedded within the IFS module and vice versa. Firstly, the IFS lecturers' responsibility was to provide assignment topics, case studies, course guides and essential fundamental concepts and any other resource associated with the course, to the AL lecturers. Secondly, the AL specialists provided the course manual that included detailed information related to the assessment tasks in IFS and details about how the students could apply the skills learnt in AL to their IFS assignments. Students worked in groups of four or five and were then obliged to provide their analyses and ideas clearly in both written and oral formats.

The embedding of activities into IFS meant that the course content was the focus, rather than generic material. The students gained an understanding of the IFS concepts and processes by practising and applying the skills learnt in the AL course through reinforcement on both sides (in the AL and IFS lectures and tutorials). Finally, the IFS lecturers used the same criteria taught in ALC in their assessments. This allowed for students to have an experiential learning component whereby they were able to practise what they were concurrently learning in ALC (Barton, 2007; Wenger, 1998).



The AL lecturers in turn worked through the IFS requirements and instructions with the students, and this allowed the AL specialists to be kept informed and updated about terminologies and concepts that the IFS lecturers used. The embedded approach created a community of practice (Wenger, 1998) and allowed the students to become insiders through the construction of their own literacy events and literacy practices in a safe and supportive learning environment (Barton, 2007; Gee, 1996, 2008; Street, 2005).

The third and final question in the introductory section asks if the transfer of skills enabled the students to pass their IFS modules well, and as a result, whether the overall pass rate in the IFS courses increased. We first discuss actual examples of some of the students' work to illustrate how they transferred the skills taught in ALC to their IFS assignments and tasks, and thereafter, we discuss the graphs to determine if the overall pass rates increased.

The following piece of evidence presented below are extracted from students' answers in the group assignment in IFS 132 in 2012. The question was: What is it about a company's website that draws you to it, keeps you there on the site longer, and keeps you coming back for more? With this question, the IFS lecturers wanted the students to evaluate high-quality websites and identify the criteria that experts use to assess and categorise websites. An example of a groups answer (quoted verbatim):

Everything about your website-from the way it looks to the way it works - must meet the quality standards of your target market" (Murtagh, 2013: 19). We agree with the author because a website that is labelled "good" would have an above average rating in the following components. The first component is appearance, which constitutes a positive use of colour, readable text, good quality photographs and a simplistic design. The second component is content, this cannot really be quantified, as its quality can only be critiqued once the target has been identified. It is therefore safe to say that good content relates well to the websites target audience. The third component is functionality, this means that every hyperlink, drop down box and button on your site should work correctly, enabling users to make use of all of the available features that are present on your website. The fourth component is usability, which relates to whether your site promotes pages that load fast, minimal amount of scroll for users, a layout that remains consistent, logical site navigation, linking text that is descriptive, cross-platform and different browser compatibility and support for a wide range of screen resolutions.

The extract reflects that the students applied the AL skills learnt in ALC to the IFS assignment. They provide evidence that the students applied critical thinking to unpack the main concepts in the question, and the answer was clearly and logical structured.

The students also provided the reference on which their answer was based. The transfer of skills to the IFS context illustrates the explanation from Bransford et al. (1999) about how initial learning is necessary for transfer, and how shared teaching and learning experiences can help students make connections across disciplines. It also speaks to Wenger's (1998) social theory with regard to learning as becoming, learning as experience, and learning as doing.

In another assignment given to the students in IFS 131, in the first semester 2013, the students were required to review the activities performed at a specified period using IS/IT. Thereafter, they had to use their findings to discuss Nicholas Carr's argument. The instruction was:

*In his HBR article, Nicholas Carr's argues that "IT Doesn't Matter". Based on your findings, do you agree or disagree with his claims. Be sure to justify your answer.*

An example of a groups' answer (quoted verbatim):

We strongly oppose the report that 'IT doesn't matter'. According to Nicholas, IT doesn't matter and we have to disagree with his statement and he is only taking one part of the corporate IT image into consideration. IT is a factor or a tool that companies use for new innovation to have a competitive advantage over rivals. It is also a crucial key to companies. According to Carr (2003, 5) has stated that "the internet has been transformed in the business world that information technology has become the backbone of commerce." IT helps them to broadcast their products easier, faster and cheaper. The following examples are in contradiction with his statement that IT doesn't matter, but it support why we disagree with him. 'IT links businesses to the customers they serve', 'as IT's power and presence have expanded, companies have come to view it as a resource ever more critical to their success'. Nicholas Carr is not specifying the processes and procedures in the activities of the business that IT has a support. Procedures are an asset that cannot be brought as a commodity. Furthermore he states that "data storage, data processing and data transport have become available and affordable to all". He adds that "infrastructure technology, in contrast, offer far more value when shared than when used in isolation, and it might well operate more efficiently as a result". All of the above mentioned states why IT is such an important aspect to us.

An assignment question in IFS 132 (2013) asks: *What is it about a company's Website that draws you to it, keeps you there on the site longer, and keeps you there on the site longer, and keeps you coming back for more?*

An example of a groups' answer (quoted verbatim):

Capturing things about a website First and foremost, the website of any entity should clearly show the name and address of the entity as well as contact details. A website is interesting when there are names and photos associated with it and this is mostly what draws readers to a website. The website should entail the history and objectives of the entity (McGuinness, 2011). Since the current generation literally revolves around technology and social media, it is wise for companies to display their presence on social networking sites. This is essential because it gives users the assurance that the business is up to date with the latest news and trends thus making their goods and services relevant. A high quality website should be easy to navigate and should not have redundant information and content. Depending on its target market, a website is attractive to users when it has a professional yet catchy design...Companies often set up fascinating and incredible websites where users are exposed to a variety of options to choose from, pictures to view and videos to watch within the actual website (Walters, 2010).

These extracts demonstrate that the students knew about explaining their answers and providing evidence for their statements. They also present more than one element or issue and they make connections and provide examples to demonstrate to the lecturers that they understood the instruction given and the content taught in IFS. The students' writing and reasoning ability stood out in their assignments and tests, which could be ascribed to the embedded approach applied and it provides evidence that they transferred the skills learnt in the ALC course to the IFS course. By teaching collaboratively, the lecturers assisted the students in becoming part of a shared community of practice where the learning experiences became belonging, becoming, and doing (Wenger, 1998).

Finally, to answer the second part of the third question (did the pass rate increase), Graph 1 shows that there are two patterns in the students' final semester mark averages (referred to as the CAM). The first is that the CAM percentages for IFS 131 (2012, 52%) and IFS 131 (2013, 52%) are lower than those of IFS 132 (2012, 57%) and IFS 132 (2013, 60%). The second pattern is that the CAM percentage for IFS 131 (2012, 52%) is the same for IFS 131 (2013, 52%), while IFS 132 (2012, 57%) increased with 3% and IFS 132 (2013, 60%) increased with 8%. The average percentages for the summative assessments showed that there was an increase from 52% in IFS 131 (2012) to 58% in IFS 132 (2012), and then it decreased to 54% in IFS 131 (2013 and IFS 132 (2013)).

Similarly, the students' final percentage pass and failure rates (Graph 2) reflect the same pattern of the CAM percentages in that the pass rate is higher in IFS 132 (2012, 84%) and IFS 132 (2013, 84%), but lower for IFS 131 (2012, 66%) and IFS 131 (2013, 74%). Thus, there was an increase of 18% in the examination mark for IFS 132 in 2012, and a 10% increase in IFS 132 (2013).

Graph 3 reflects the percentage of students who obtained an A and B symbol in the four semesters. The pattern that we identified continues in that the percentage of students who obtained an A in the second semester (2012, 7%) is higher than the first semester (2012, 4%) and so is first semester 2013 (4) and second semester 2013 (7%). The same applies to the percentages of students who obtained a B symbol (first semester 2012, 4% and second semester 2012, 6%; first semester 2013, 3% and second semester 2013, 5%). Thus, the percentages in all three graphs reveal that the intervention was more successful in the second semester courses – IFS 132 (2012 and 2013) – than in the first semester courses – IFS 131 (2012 and 2013).

It is understandable why the students' results in IFS 131 (2012) are lower than those for IFS 131 (2013). The intervention took place in the second semester only and not in the first semester of 2012. However, the fact that the students also performed less strongly in IFS 131 (2013) is concerning because this was during the time of the embedded approach. An explanation could be that the students who registered for IFS 131 were a combination of three-year and four-year degree programme students. As such, the four-year degree students are those who are in the extended curriculum programme. This could mean that the students were not academically strong enough and that was why their performance was lower than the other students in IFS 132 (2012) and IFS 132 (2013). This is a very important finding because it means that we need to pay more attention and support students even further in the first semester of the IFS courses.

## **6. REFLECTION ON THE EMBEDDED APPROACH: LESSONS LEARNT**

In response to the increasingly diverse student body and a significant need to address the AL skills of many first-year students, collaboration in embedding the AL skills into the IFS curriculum was deemed important (Letseka, Cosser, Breier, & Visser, 2010; Panitz, 1999; Zhu, 2012; Zygouris-Coe, 2012). The nature of the relationship between the collaboration team was meaningful and enriching because of a shared educational vision and commitment focused on improving students' performance, thereby creating a community of practice that Wenger (1998) advocates. Both students and staff benefitted from this collaborative effect.

The embedded approach played a major role in the success of the students in that it assisted the students with transferring the skills taught in ALC to IFS (Bransford et al., 1999).

In so doing, the students not only passed the IFS module, but some of them passed exceptionally well.

A significant part of the collaboration was that clear expectations were established about what students were required to do in order to provide the students with consistent and meaningful support from all members, and from all resources used in the two subjects – again drawing from and building on the community of practice (Wenger, 1998) and the literacy events that Barton (2007) explains.

Working closely with colleagues in a different department was not just about learning new approaches – it was also about learning a completely new way of approaching common problems. Thus, we were constructing new meanings in everyday activities and made sense of these collectively (Barton, 2007; Panitz, 1999; Wenger, 1998; Zhu, 2012). Explaining how the approach would work was important, but equally so was making sure that both parties knew the expectations and the boundaries. Any dissatisfaction or concern that arose was handled in a sensitive and professional manner.

How did we 'dance' together? Individual personalities played a major role in the success of this engagement. The IFS lecturers were unfamiliar with this type of collaborative engagement and the academic theories underlying it, but they believed this was beneficial to students – the fundamental objective of this engagement. The AL specialists provided the necessary guidance needed to drive and underpin the overall undertaking. They also clarified any uncertainty that arose due to a lack of prior knowledge. The collaborative interactions allowed the IFS lecturers to reflect on their teaching methods and practices, and gaps that might have impeded students from applying the AL skills to the IFS course. Wenger's (1998) learning as becoming, learning as experience, and learning as doing, are applicable to what they experienced in the embedded approach; so is Barton's (2007) 'ecology' approach to literacy and learning, and the explanation from Bransford et al. (1999) as to how people learn and transfer knowledge.

The collaborative work was further beneficial in the sense that everyone was open to learning and felt empowered in the process. This led to the acquisition of new knowledge and hands-on learning which was powerful and liberating (Panitz, 1999; Zhu, 2012; Zygouris-Coe, 2012). The IFS lecturers were not afraid to articulate their shortcomings or gaps related to AL because the feedback helped them to provide useful feedback on students' assessment tasks during the course of the semester. Likewise, through the collaborative work, the AL specialists gained a better understanding of the complex field of IFS and what the students needed to learn in the IFS course. The fundamentals of the theoretical framework were at play in the embedded approach (Barton, 2007; Bransford et al., 1999; Wenger, 1998).

Finally, the IFS lecturers were receptive of the approach and embraced it without considering the many inconveniences the project caused, especially to their workload. With an established level of trust, the team members were not only willing to listen to each other, but they were also able to share their knowledge and strengthen the community of practice that was created, as Wenger (1998) advocates.

## **7. CONCLUSION**

The main objective of the collaborative work was to successfully embed AL skills into the IFS first-year course, and also to ascertain whether the skills transferred enabled students to perform better in the IFS course, thereby resulting in increased overall pass rates.

From an academic perspective, the collaborative work was an intervention for ensuring quality as well as for strengthening the transfer of AL skills into the mainstream curriculum. The embedded AL skills enabled the students to achieve the learning outcomes in the IFS course. The utilisation of the same material for an assignment presented students with an opportunity to analyse issues in more depth and to apply the skills learnt in ALC, thereby assisting them in the development of their AL skills in an IFS context. This form of support is significant for students not only at first-year level, but also in pursuing further disciplinary studies. The skills acquired will benefit the students in future when lecturers may not have the time or capacity to give thorough feedback related to their AL skills.

The findings in this article provide evidence that a credit-bearing AL course can function alongside discipline specific courses when there is collaborative teaching and an explicit commitment to embed AL skills into the main stream curriculum. This collaborative teaching had positive results, and direct and indirect benefits for both staff and students. It is therefore recommended that other AL specialists take cognisance of this approach and consider experimenting with it.

It is further recommended that the managerial staff (heads of department, directors of teaching and learning, and deans) be supportive and willing to allocate more resources to such attempts at collaborative teaching among staff from different disciplines.

Lastly, it is recommended that further research be conducted to strengthen the validity and credibility of such approaches aimed at embedding AL skills in the mainstream curriculum at second- and third-year levels.

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