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## ACUADS 2009 Conference

*Interventions in the Public Domain*

Queensland College of Art, Griffith University  
 South Bank | Brisbane | Queensland

30 September - 2 October 2009

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## Publication of the Conference Papers ACUADS 2009

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**Editorial:**  
*Interventions in the Public Domain* by Associate Professor Ross Woodrow, Queensland College of Art, Griffith University

The papers in this publication were initially delivered at the annual conference of the Australian Council of University Art and Design Schools at the Queensland College of Art, Griffith University over the three days from 30th September to 2nd October 2009. The papers have been peer-reviewed in a double-blind referee process that required considerable effort and expert co-ordination by Marie Gehde, the Administrator of the ACUADS 2009 Conference at QCA. My role as editor has been to ensure the integrity of the process and to adjudicate on any conflicting reports from the referees. With over sixty papers submitted, the process of allocating papers to referees with corresponding disciplinary expertise in institutions other than the author's own has been a complex task, but also a rewarding one. It was heartening to see the care and professionalism taken by so many referees who have given their time to ensure the rigour and quality of writing in the art and design disciplines. I express my gratitude to these individuals who remain anonymous to all but Marie Gehde and I.

The theme of this publication "Interventions in the Public Domain" was chosen by the Queensland College of Art, ACUADS Conference Committee, chaired by Professor Paul Cleveland, since it is the prerogative of the hosting institution to choose the focus of the Annual Conference. The session themes were chosen by members of the Convening Committee and not unexpectedly reflect particular areas of research strength at the QCA, Griffith University.

The session "Public Art: Towards a Critical Discourse" was proposed by Associate Professor Jay Younger who has extensive experience in the arena of public art as both a practitioner and curator involved with some of the largest public art projects in Queensland.

QCA Adjunct Professor Tony Fry is Convenor of the Design Futures Masters program in the College and has been one of the leading international figures in the movement towards sustainable design practices. His session "Sustainability, Design, Education and Transformation" brought together a very diverse range of papers all united by the recognition that design practices need to be at the leading edge in shaping change towards a sustainable future.

There was strong representation of QCA and GFS (Griffith Film School) staff in the session "Documentary and Narrative" convened by David Lloyd, as documentary photography and film are particular areas of research focus at Griffith University.

David Lloyd also proposed the much more unfamiliar theme of "Refereeing the Visual" with the hope that debate in academe might give far greater prominence to visual literacy.

The session I convened "Theory for Practice" was in direct response to a request made at a round-table of research directors and deans from art and design schools from around Australia and convened by Professor Brad Buckley at the Sydney College of the Arts in March 2009. At this meeting, where the primary discussion point was the ALTC funded Creative Arts PhD Scoping Study, there was unanimous agreement that the 2009 ACUADS conference needed to include a session dealing with exegetical writing generally and specifically the writing of an exegesis within the studio-based PhD submission. I enthusiastically took up this suggestion as my provocative introduction to the call for papers indicates but I was nevertheless overwhelmed by the depth of the response. At last it would seem, *Theory* has become the most popular topic in art and design schools, at least when it comes to the shaping of new exegetical modes of writing to illuminate studio practice. And, from the wide range of papers presented in the "Theory for Practice" sessions it is clear that university-based art schools from Perth to Brisbane are developing techniques and methodologies to both teach and critically evaluate exegetical writing at undergraduate and postgraduate level.

In this publication, the papers are arranged alphabetically by author within the various session themes and each theme is introduced with the original statement given by the session convenor in the initial call for papers.

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Images of the  
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# **Recommendations for intervention in the visual domain: A study of undergraduate design students' visual literacy skills and predominate learning style modalities.**

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## INTRODUCTION

It is a common assumption among higher education design educators that design students have good visual literacy skills (based on having studied art or design in high school) and that they learn more effectively when material is presented visually. However, this is not always the case and recent studies have indicated that visual literacy levels as well as predominant learning modality vary among students (Rourke and O'Connor 2009, In press-a; Rourke and O'Connor In press-b). This paper discusses the findings from a recent study that focussed on visual literacy levels and predominant learning modality among undergraduate design students. The findings, which have significant implications for higher education design history educators, reinforce the imperative to incorporate a range of different teaching materials and strategies into teaching. A number of key recommendations are provided aimed at assisting educators towards improving the learning experience for undergraduate design students.

## VISUAL LITERACY AND LEARNING

The importance of developing students' visual literacy skills has been widely recognized in the literature (Levie 1987; Rakes 1999; Romice 2000; Seels 1994; Sless 1984). Furthermore, the belief that educators "should concentrate and exploit the visual sense through the nurturing and development of visual literacy" has also been acknowledged (Avgerinou and Ericson 1997 p287). It is also recommended that educators should guide students in respect to their "ability to construct meaning from visual images" (Giorgis et al. 1999 p146). However, it is posited by Downy that the effectiveness of visual representation was dependant

on the viewer's ability to accurately and independently interpret them (Downy 1980). This places the onus not only on the learner to comprehend what they see but also on the educator to utilize visual images that best illustrate the content to be learnt. It has been argued that students need to be encouraged to develop visual literacy skills, which involves educators developing the learner's ability to decipher different pictorial representations in a variety of contexts and making meaning from these images (Glasgow 1994). Hence, educators should take some responsibility in the process of visual learning to adopt a variety of teaching methods and learning activities that expose students to a diversity of visual stimulus within different contexts. While these factors have been generally well adopted by design history educators in higher education, the notion of assisting the learner to comprehend the 'meaning' of the image (and remember it) is a far more difficult objective for educators: many interpretations may be valid and images themselves are complex teaching tools to utilize to promote effective learning.

As Schnotz proposed, "it is not enough that learners possess the cognitive schemata of everyday knowledge required for understanding pictorial illustrations", they need also to have acquired domain specific prior knowledge and the skills to apply it (Schnotz 2002 p116). As educators we should promote in students an understanding of the connection between the disciplinary language that needs to be learnt, and the factors about the visual image that need to be remembered while linking this new information to the learners past acquired knowledge. Studies have demonstrated that visual images are recognized and remember for longer duration than verbal information alone (Levie 1987; Mayer 1989). Hence, it is clear that educators need to utilize not only well-selected and considered visual teaching tools but also adopt teaching methods that enhance students' visual literacy skills.

## LEARNING STYLE MODALITIES

The term learning style, which is generally considered to comprise cognitive styles, instructional preferences and learning strategies, has been defined as "an

individual's characteristic and preferred ways of gathering, organising, and thinking about information" (Fleming 2001 p1). It is critical for educators to have an understanding about students' learning styles to enable the development of learning programs that are productive and effective for all students. However, during the design and development of learning programs, educators often make the "assumption that learners exhibit uniformity in the ways in which they process and organise information (cognitive styles), in their predispositions towards particular learning formats and media (instructional preferences) and the conscious actions employed to deal with demands of specific learning situations (learning strategies)" (Sadler-Smith and Smith 2004 p396). An understanding about individual learning styles is also crucial from the learner's perspective as research indicates that high student performance occurs in learning activities that match student's learning style (Fleming 2001).

According to Sadler-Smith and Smith, a key element in the learning process "lies in the individual becoming aware of her or his preferred style. This depends upon the opportunity being made available for an individual to learn about their own style, but also the predisposition of the learner to be motivated to become self-aware and to behave in flexible and different ways when circumstances demand it" (Sadler-Smith and Smith 2004 p407). In recent times identifying and understanding the various different learning styles that students adopt has become an important factor towards improving student learning. For, as Hawk and Shah testify, faculties "are likely to reach only some students in a given course if they assume that all students learn the same way or that one teaching approach will connect with all students" (Hawk and Shah 2007 p2).

## RESEARCH AIMS

This study's key aims were to firstly examine visual literacy levels among undergraduate design students; and secondly to identify the predominant learning modality among the same participant group. Patterns of similarity and difference between the two subsets of the sample group: that is, between

students from Sydney, Australia and students from New Zealand were also examined.

For the purpose of this study Ausburn and Ausburn's definition of visual literacy has been adopted, which suggested that visuals have their own vocabulary, grammar and syntax and that a visually literate person should be able to decode (interpret) visual messages successfully and to encode (compose) meaningful visual messages (Ausburn and Ausburn 1978). A predominantly qualitative approach or an approach that acknowledges a wider hermeneutical perspective may appear appropriate for this study. However, the research design reflected a somewhat narrow hermeneutical perspective to mirror the design curriculum and teaching strategies common in higher education in New South Wales (Rourke and O'Connor 2009).

## RESEARCH DESIGN

Qualitative procedures coupled with quantitative analysis were used in this quasi-experimental study. Specifically, the F-sort and Q-sort procedures were applied in a controlled classroom situation and the results were quantitatively analysed. The tests were kept short in duration to avoid participant fatigue as the length and duration of testing procedures are considered to impact the reliability and veracity of test outcomes. The maximum recommended number of questions or evaluations within a given questionnaire should be around fifty (Heise 1970).

### Test 1 – Identifying predominant learning modality

To assess predominant learning style, the VAK test was used (Chislett and Chapman 2005). This test, which assesses strengths and weaknesses in relation to visual, auditory and kinaesthetic modalities, was selected as it can be self-administered and scored by participants, thereby providing data for this study as well as useful information for participants regarding their predominant learning modality. In addition, the VAK test is of relatively short duration and was applied in an attempt to minimise and/or avoid participant-fatigue.

## Test 2 – Assessing visual literacy

To assess visual literacy levels, Q-sort and F-sort procedures were applied in conjunction with visual stimuli. The Q-sort technique elicits perceptions and judgments of a subjective nature by directing participants to sort visual stimuli using categories defined by the researcher (Amin 2000; Stephenson 1953). The F-sort technique, a modification of the Q-sort technique, allows participants to define their own categories without direction from the researcher when sorting visual stimuli (Miller et al. 1986). These techniques are considered an effective tool for capturing patterns of subjective responses to a set of visual stimuli (Amin 2000; Brown 1986).

## VISUAL STIMULI

The visual stimulus sampling approach used in this study, adopted from earlier studies, involved collecting a large set of digital photographic images that illustrated examples of the historical design styles of the Arts and Crafts movement, Art Nouveau, Art Deco and Bauhaus (Schroeder 1988; Wohlwill 1977). Studies investigating the use of visuals in learning have expressed the importance of testing participants using: 1) material similar to their course material, and 2) that links into the course objectives (Szabo et al. 1981). Colour was used for all visual stimuli as the use of colour graphics in instruction instead of black and white can promote achievement (Kleinman and Dwyer 1999). A total of 62 images were collected and these were assessed using the nominal group consensus technique.

Nominal group consensus technique is one of a number of techniques used to gain consensus in respect to research materials and visual stimuli. The nominal group, which included the two primary researchers of this study each of whom held doctorate qualifications in design, selected a final set of 12 digital photographic images for use in the study. Generic code numbers were used to identify the visual stimuli. The selection of visual material also was chosen to take into account 'prototypes' used to teach design history. According to Solso,

'prototypes' can be used in art to assist with the recognition of the central visual characteristics of the work (Solso 2003). Furthermore, prototypes were described "as the abstractions of stimuli against which patterns are judged", Solso stated that "it is possible, and far more economical, to store impressions that embody the most frequently experienced features of a class of objects" (Solso 2003 p230).

## PARTICIPANTS AND SAMPLE SIZE

The participant group of this study comprised first year undergraduate design students from the College of Fine Art (The University of New South Wales) and first and second year Bachelor of Design (Fashion) students, Auckland University of Technology, New Zealand. In all, 231 participants formed the sample group: 178 Australian students and 53 students from New Zealand. Of the sample group, 74% were aged 17-20; 23% were aged 21-30 and 3% were aged 30 or more. The participant group comprised 76% were female and 24% were male; however, the proportion of males was lower in New Zealand than in Sydney: 11.3% as opposed to 27.5% in Sydney.

## PROCEDURES

All participants were provided with a questionnaire and a set of visual stimuli in a well-lit classroom situation and were directed to self-administer the questionnaire. The questionnaire included a 'Participant Information' section; VAK thirty question test, an 'F-sort' section and a 'Q-sort' section, and participants were directed to complete each section in serial order. The study proceeded under the supervision of the researchers and the resulting data was collected and bundled for subsequent data analysis.

The F-sort questionnaire required participants to sort through the visual stimuli and arrange the images into groups according to their own categories. Once sorted, participants were then required to record the sorted visual stimuli under their own category headings on the instruction form. Participants were then

directed to complete the Q-sort questionnaire which required a second examination of the visual stimuli and a re-grouping of the visual stimuli into groups identified by the researchers as Arts and Crafts movement, Art Nouveau, Art Deco and Bauhaus.

#### DATA ANALYSIS: F SORT RESULTS

The F-sort task required participants to sort the visual stimuli into categories using headings that they created themselves, and just over half the Australian subset of the participant group (51.4%) categorised the images using object-type descriptors (such as “furniture, textile, building”), while 24.8% of their New Zealand counterparts did the same. Of the remaining participants, a large proportion of the New Zealand subset (27.1%) but only 1.7% of the Australian subset categorised the images into a large range of multiple categories with diverse, participant-generated headings (such as “Chairs, Exteriors, Art” and “Post-modern, Brown organic, Modern geometric, Old-fashioned, Intricate patterns”). Of the Australian subset, 17.7% created categories based on relatively common design/art category descriptors (such as “Modern; Post-modern” or “Modern, Medieval, Organic, Oriental”), while nil New Zealand participants used the same categorisation method. Almost a quarter (22.9%) of New Zealand participants and 9.7% of Australian participants formulated categories based on shape, pattern and/or colour descriptors (such as “Geometric, Floral, Green, Grey”). A proportion of participants created categories but did not provide category descriptors: 13.7 of the New Zealand cohort and 8.0% of the Australian cohort. Finally, a very small proportion of the Australian subset (2.9%) and nil New Zealand participants sorted the images and categorised them using the ‘correct’ design styles. Results of the F-sort task are illustrated in Figure 1.

Figure: 1 F-sort results (Blue: Australian subset; Red: New Zealand subset).

#### DATA ANALYSIS: Q SORT RESULTS



A relatively small percentage of the participant group (Australian subset: 5.6% and New Zealand subset: 3.8%) achieved a '4 out of 4 correct' score' by correctly identifying all twelve images representing the four design styles used in the study (Arts and Crafts, Art Nouveau, Art Deco and Bauhaus). The results were mixed across the two participant subsets as per Table 1.

Table 1. Correct scores by participant group subset

	0 of 4 correct	1 of 4 correct	2 of 4 correct	3 of 4 correct	4 of 4 correct	Unable to sort images
AUS	57.3%	21.3%	10.7%	3.4%	5.6%	2.2%
NZ	35.8%	40.6%	9.4%	11.3%	3.8%	0.8%

*n* = 231

A large proportion of participants were unable to identify the images according to the design styles provided: 57.3% of the Australian subset and 35.8% of the New Zealand subset. A small group of participants (Australian subset: 2.2% and New Zealand subset: 0.8%) indicated on their questionnaires that they were not familiar at all with the design style categories provided in this study and were unable to sort the images at all. These results are illustrated in Figure 2.

Figure: 2 Q-sort results (Blue: Australian subset; Red: New Zealand subset).

Of the images correctly identified by the participant group, the Art Deco style achieved the highest overall correctly sorted score (24.5%), followed by the Bauhaus style (23.9%), the Art Nouveau style (21.8%) and the Arts and Crafts Movement style (20.3%).

## PREDOMINANT LEARNING MODALITIES

Of the participant group, 40.6% identified their predominant learning modality as visual, 34.2% as kinaesthetic and 25.2% as auditory. In examining the predominant learning modality between the two subsets of the participant group, the results were almost identical with the breakdown as follows. Visual: 39.9% (Aus) and 40.1% (NZ); Auditory: 26.8% (Aus) and 24.7% (NZ) and Kinaesthetic: 33.2% (Aus) and 34.5% (NZ). However, over 90% of the participant group indicated mixed preferences and not a single style learning style modality preference. These results are illustrated in Figure 3.

Figure: 3 Proportion of visual, auditory and kinaesthetic learners.

## PATTERNS OF SIMILARITY AND DIFFERENCE: VISUAL LITERACY AND LEARNING MODALITY

Visual learners were in the majority (47%) of participants that achieved a 100% correct score in the Q-sort visual literacy test, followed by auditory learners (29%) and then kinaesthetic learners (24%). No real pattern or trend emerged that indicated that any of the predominant learning modalities were associated with visual literacy; except that a surprisingly large proportion of predominantly visual learners scored very poorly in the Q-sort visual literacy test compared with auditory and kinaesthetic learners. Auditory learners' results were the most stable across the Q-sort scores, while kinaesthetic learners also scored poorly in the Q-sort visual literacy test as illustrated in Figure 4.

Figure: 4 Visual literacy scores by predominant learning modality.

## DISCUSSION OF RESULTS AND KEY RECOMENDATIONS

As previously discussed, anecdotal evidence suggests that teachers of design in higher education assume that because they are teaching a discipline with a strong visual focus, that students will be predominantly visual learners with high levels of visual literacy. The results from this study provide evidence to suggest that these assumptions are incorrect. As Stokes has suggested that if “visual literacy is regarded as a language, then there is a need to know how to communicate using this language, which includes being alert to messages and critically reading or viewing images as the language of the message” (Stokes 2002 p12). Many of the students in this study had difficulty distinguishing the main visual messages imbedded within the images which could have guided them towards recognition of visual elements and identifying the key similarities and differences in these visual elements. Superficial observational points were received from students lacking visual literacy skills. These students tended to rely on visual type-form (recognition schemata) rather than associations that identify individual representations that required having the skill to recognize relevancy and the prior knowledge to put what they had identified into appropriate language.

For what is commonly considered ‘literacy’ according to Hobbs is “the ability to access, analyse, evaluate, and communicate messages in a variety of forms” (Hobbs 1997 p7). Many novice learners as this study has discovered, have limited disciplinary language to express (analyse, evaluate, and communicate) appropriately what they see in a visual exemplar regardless of the amount of time they had spend viewing the image. As a result it is suggested that if a learner has been identified as adopting a predominately auditory style of learning they would benefit from a discussion about the meanings of the language that needs to be learnt in connection with the visual example. Whereas kinaesthetic learners would find it more beneficial to engage in ‘hands-on’ activities that physically engage the learner through actions with the disciplinary language and the associated visual example. The visual learner tends to absorb information more

efficiently if the visual example is presented with the text in an integrated manner such as in concept maps and cartoons. Role play also suits learners who are identified as predominantly kinaesthetic learners and, in the study discussed above, the second largest proportion of the participant group were identified as predominantly kinaesthetic learners.

As Morgan and Welton suggested, it is imperative that learners in higher education are provided with instruction and activities that promote the skill of receiving, understanding and reacting to visual information, so the quality or effectiveness of communication is improved and the subtlety of the messages can be further developed (Morgan and Welton 1992). Understanding students learning styles and visual literacy skills provides useful information that could assist towards improving the way visuals are used to promote the long-term retention of learning, a worthy goal for educators in higher education. It is envisaged that a longitudinal study currently being conducted by the authors will provide a clearer picture on how visual literacy skills develop over time and a broader perspective on the preferred learning styles of undergraduate design students.

Undergraduate design students' visual literacy and predominant learning modalities change over time and, given the current focus on the need for sustainability within education, it is crucial that educators regularly investigate students' visual literacy skills and learning styles and adjust their teaching instruction and activities accordingly. It is imperative that educators ensure that a match occurs between these two sides of the teaching and learning interface. In addition, just as the world is constantly changing in terms of technology and visual imagery, so is the way in which students 'read' the images within their world. The changing nature of technology and the constant flux of symbols and imagery can have an impact on both undergraduate design students and educators alike. It is our responsibility as educators to pass on to students strategies that enhance learning and the transformative way in which we cognitively process information within an ever-changing context.

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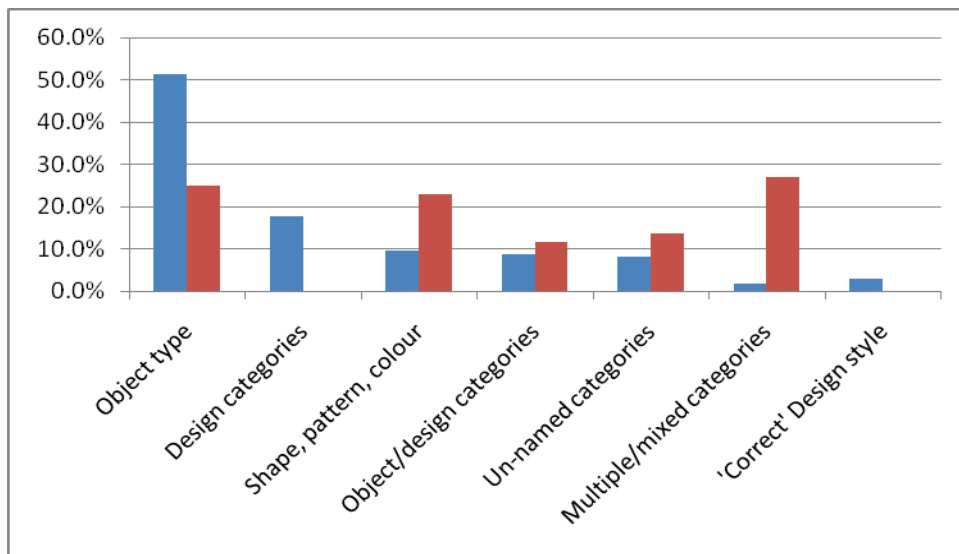


Figure: 1 F-sort results (Blue: Australian subset; Red: New Zealand subset).

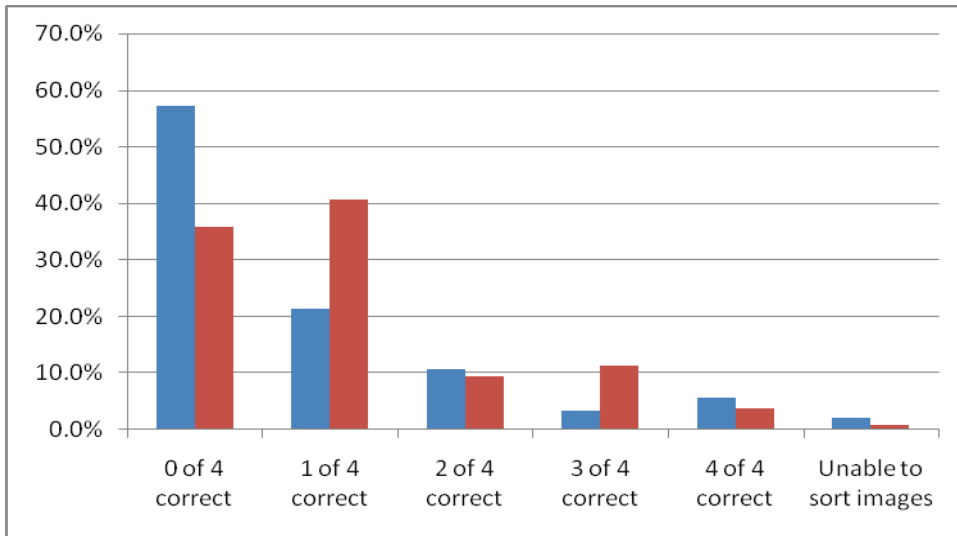


Figure: 2 Q-sort results (Blue: Australian subset; Red: New Zealand subset).

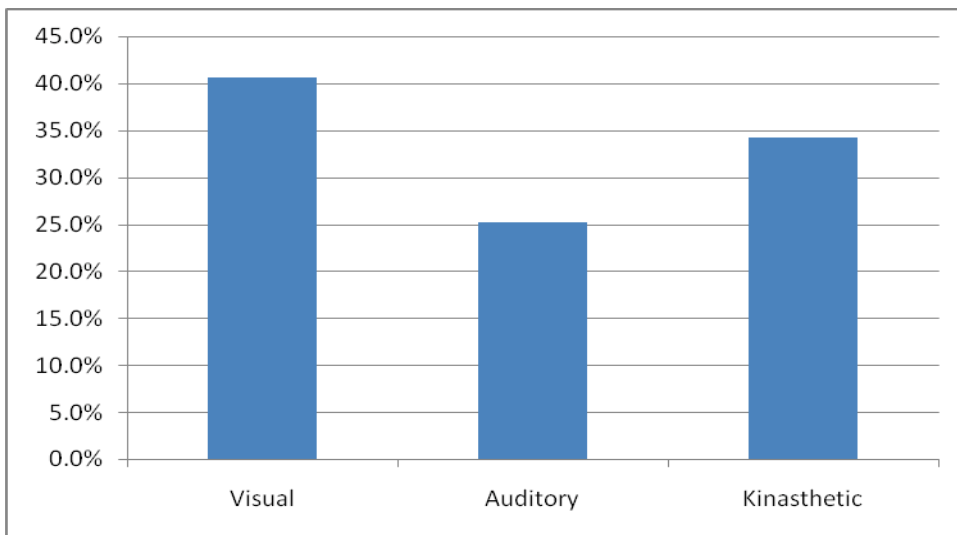


Figure: 3 Proportion of visual, auditory and kinaesthetic learners.



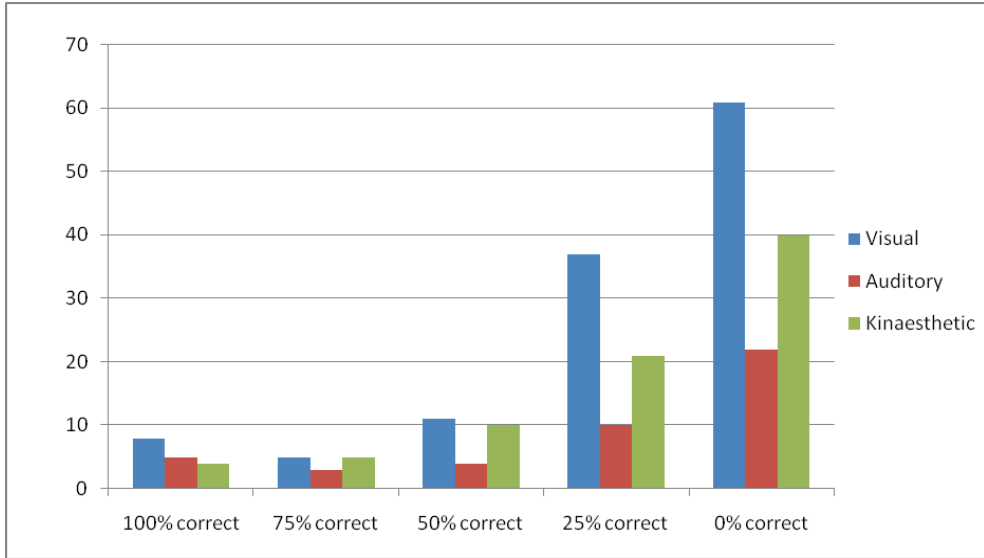


Figure: 4 Visual literacy scores by predominant learning modality.