Life Skills teachers' readiness for their role: implications for Higher Education

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Introduction

Among several educational reforms in Oman since 1998, the introduction of Life Skills (LS) in the Omani national school curriculum in the 2000-2001 academic year has been one of the crucial innovations aimed at linking school learning with the student's local environment, characteristics and needs. It was hoped that this school subject would ensure the transfer of skills and knowledge into the students' practical world. LS in Omani schools forms part of the general education which is compulsory for all students in grades 1-10; the curriculum for LS covers seven areas of learning: personal skills, citizenship, health and safety, home culture, world of work, social skills and globalism. Each of these areas embraces knowledge, skills and activities related to technology, career counseling and guidance, and general skills for life (Ministry of Education, 2012, 2005).

It is expected that through studying LS students may have the opportunity to acquire knowledge and develop an understanding of the principles underlying technological developments, general skills and careers with a general aim of preparing well adjusted and competent citizens capable of participating effectively and positively in the development of their country. The curriculum for each grade is supported by a teachers' guide and a students' book. The teacher's guide includes the LS objectives, the desired competencies, guidelines for teaching the subject, the necessary materials and facilities required for teaching the subject, examples of instructional approaches, accompanying activities and evaluation rules. The students' book includes the desired competencies, examples of useful accompanying activities and behaviors, and safety rules. The purpose of integrating the study of life skills into the curriculum of the primary grades in the Sultanate of Oman is to help children to better understand their world, the world of work and technology, and the ways of how to benefit from using technology in their everyday life. The curriculum at this stage, which comprises an introduction to simple skills related to technology, daily life skills and careers, encourages students to follow a healthy life style, deal with the products of modern technologies and local environmental issues, and improve their co-ordination through manual activities such as designing and making a table lamp. It comprises the subjects of health and nutrition, life skills, general safety and road safety, and some 'vocational activities' that introduce simple vocational abilities. The curriculum at this stage is not vocational in the conventional sense (Ministry of Education, 2005, 2012).

The introduction of LS and the emphasis on experiential learning and practical work within the framework of general education in Oman has been one way of responding to the needs of the Omani society and citizens (Rassekh, 2004; Ministry of Education, 2001, 2006). The major component of LS curriculum stresses the importance of technology and the need to equip students with ways and means of using the products of technology in their daily life (Issan and Gomaa, 2010).

One of the aims of the educational system in Oman is to produce effective and productive citizens who are able to deal with the requirements of continuous technological development and changes in life style. In general, the main rationale for introducing LS in basic education is to expose students to real life

skills in order to improve their daily life and home environment and to enable them to realize the positive and negative effects of technology in various environments (Rassekh, 2004; Lynch, 2000; UNESCO, 2002; Al-Saydeh, 2002; Reid, 2000). In Oman, as well as in many of the other countries of the world, this desirable socially structured link between school and rest of life is intended to be achieved through areas of the school curriculum variously denoted as Pre Vocational Education (PVE) , *life skills*, *applied studies*, *applied technology education*, *technical education*, *crafts design and technology*, *design and technology*, *industrial arts*, *technology education*, etc (Després, 2011; Volk, 1996, 2011; Reid, 2000; Lynch, 2000; UNESCO, 2002, 1974).

To teach LS for the second cycle (Grades 5-10), Oman's Ministry of Education (MoE) assigned one teacher in each school to cater for the delivery of the theoretical and practical aspects related to this subject. Although there are no pre-service LS teacher education programs in Oman, extensive in-service training sessions are conducted regularly by the Ministry of Education for the teachers who are assigned to teach LS as a school subject. As their role dictates, LS teachers are expected to provide students with knowledge and skills that enable them to deal with and make use of the products of modern technology in their local environment. This entails that LS teachers should keep up-to-date with recent innovations in technology and information. Since Information and Communication Technology (ICT) is an essential tool in the provision of technology, LS teachers are required to possess the necessary skills in this area so that they are able to incorporate them in the assessment of students' performance as well as in the teaching of various LS activities (Gibson, 2007; Rassekh, 2004; UNESCO, 2002). In addition to the delivery of different activities related to the seven areas mentioned above, LS teachers shoulder other extremely demanding duties. They must manage workshops with hundreds of pieces of equipment, materials, and tools and keep up with a technical curriculum the content of which is rapidly changing, requiring them to continually upgrade their knowledge and expertise (Rogers, 1996; Gibson, 2007; Rawageh, 1994). In line with this demand, Attwell (1997) contends that the changes that are occurring in the knowledge and skills aspects of every profession, including teaching itself, impose new roles and responsibilities on professionals. Obviously, the roles of LS teachers address numerous topics and duties with regard to the delivery of the theoretical and practical aspects of LS. One of the challenges facing LS and the training of LS teachers in Oman is the fact that there is no pre-service LS teacher education program. Therefore, it is legitimate to ask the following questions:

- Are LS teachers in the Sultanate of Oman up to the challenge with regard to meeting the requirement for teaching LS?

- What roles can higher education institutions in Oman play to improve LS teachers' knowledge, confidence and practice in teaching LS?

This study

Problem

Oman has taken positive steps to define and establish LS as an academic discipline in schools. All students are expected to study technology and life skills following a structured curriculum from their first year in primary school through to year 10 (age 16: the end of compulsory basic education). The success of the LS curriculum will depend upon its successful implementation in the schools, and teachers are the crucial factor if successful implementation of LS curriculum is to be achieved (Rassekh, 2004).

The knowledge and skills related to the main components of the Omani LS curriculum are increasing at an exponential rate, which implies a continuous curriculum change, and often a necessity for teachers to work with new ways of teaching and learning (Rassekh, 2004; Rohaan, Taconis and Jochems, 2010;

Gibson, 2007). It also necessitates that LS teachers constantly acquire knowledge in order to cope with the ever changing nature of the LS curriculum. The roles associated with LS teaching are numerous and demanding; and this requires that LS teachers' level of ability and needs should constantly be identified so that suitable training at higher education institutions can be provided.

Significance of the Study

LS was introduced in Omani schools to be of assistance in acquainting Omani students with the aspects of technology, life skills, and careers that are important in the twenty-first century. However, unless teachers are adequately trained to deliver this curriculum area, the teaching of this subject will not achieve its objectives. Therefore, this study aims to examine LS teachers' ability regarding the implementation of their curriculum.

According to the outcomes of the recent educational reform in Oman regarding teaching methods, LS teachers are expected to refrain from basing their teaching and assessment on rote learning and memorization: their teaching should be based on a practical approach with special emphasis on learning through experience. To the best of the researcher's knowledge, no research has previously been conducted regarding the extent to which LS teachers have responded to the expectations of these recent educational reforms.

The results from this study will, it is anticipated, offer further inputs to higher education institutions regarding the development and implementation of pre-service and in-service LS teacher training programs adapted to the specific needs of LS teachers in Oman.

Purpose of the study

Teachers' perceptions are critical to the success or failure for the effective delivery of any subject at school and to setting up suitable pre-service and in-service training tailored to their needs (Can and Cagiltay, 2006). Therefore, identifying the extent of LS teachers' ability (self-perceived) to deliver their curriculum will contribute to developing a profile of teaching needs for LS teachers that can be used to set up pre-service and in-service training programs at higher education institutions to address needs relating to the teaching of LS at school.

The focus of this study was an assessment of LS teachers' perceptions regarding their own level of ability to handle the teaching of LS. The issues addressed in this study were planning, execution, assessment, technical content, vocational counseling and guidance, and administrative duties.

Literature review

Contemporary educational authorities and higher education institutions working to improve school education have placed a great deal of emphasis on the teacher and teacher preparation, as the teacher is a key element in the success of any education reform process (UNESCO, 2002). Onwuegbu (2001) describes teaching as the most important job in the world and, at the same time, the most difficult one. According to him, teaching is difficult because teachers have to deal with complex human behavior which, once established, is difficult to change; and the complexity increases if the teacher is not equipped to achieve such change. Secondly, the teacher is called to change and modify existing behaviors and to establish new ones as well. Olaitan and Agusiobo (2000) view teaching as practical efforts to bring about desirable changes in human learning, abilities and behavior. Teachers as agents of change are thus central:

> "…the teacher is the ultimate key to educational change and school improvement… Teachers don't merely deliver the curriculum. They develop, define it and reinterpret it too. It is what teachers think, what teachers believe and what teachers do at the level of the classroom that ultimately shapes the kind of learning that young people get" (Hargreaves, 1994, ix).

The quote clearly implies that teachers are central to curriculum implementation. They plan how they will teach a lesson and they construct the actual lesson with students as they teach, based on students' learning styles and how they will understand a lesson. Teachers' attitudes and beliefs about the curriculum map out the actual taught curriculum.

To be effective, teachers need to apply three interdependent bodies of knowledge and understanding: about the content to be learned, about how pupils learn (e.g. an understanding of students' learning styles), and about how to manage the process of learning (MacGilchrist, Reed & Myers, 1997). According to Verloop, Van Driel & Meijer (2001), *teacher knowledge* comprises all knowledge and insights that underlie teachers' actions in practice, including tacit knowledge. *Subject-specific teacher knowledge* is important for success in teaching any subject; and in relation to LS teaching, for example, teacher knowledge has been found to be essential for stimulating a positive attitude towards technology in pupils (Rohaan, Taconis & Jochems, 2009, 2010). Regarding technology teacher knowledge, subject-specific knowledge concerns the technological content that is to be taught. This knowledge domain includes conceptual knowledge (knowledge of facts, principles, and theories related to technology) and procedural knowledge (how to solve technological design problems, as well as determining and controlling, utilising, and assessing impacts of technology) (Garmire & Pearson, 2006; ITEA, 2006). These areas of teacher's knowledge are considered important as they have influence on students' perception of the learning area LS (Rohaan et al, 2009, 2010; Shulman, 1987). *Pedagogical content knowledge* is knowledge of pedagogical approaches that are suitable for LS teaching, e.g., inquiry-based and problem-based learning LS teachers, who are trained to teach a wide variety of topics, will need a thorough understanding of the subject matter of LS to know which topics to address and how to address them in their LS lessons.

The teachers' role in the modern education system has shifted from being the one who imparts knowledge to the one who guides or facilitates learning. To empower teachers to perform their new role, a constructivist approach to teacher preparation programs should be adopted at higher education institutions (Fox-Turnbull and Snape, 2011). According to the principles of constructivism, learners actively construct knowledge by direct interaction with their local environments (Lynch, 2000) and learning is more effective when the learner is actively engaged in the construction of knowledge rather than passively receiving it. Al-Nofli (2010) and Fox-Turnbull & Snape (2011) contend that inquiry-based and problem-based learning are generally accepted to be the most appropriate pedagogical approaches for LS, science and technology education. This is because, they add, both approaches are constructivist teaching methods, based on the principles of constructivist learning theory. Therefore, allowing students to learn through a real and authentic problem should be the starting point. The student should feel ownership of the problem and the problem-solving process, the learner's thinking should be challenged, and reflection should be supported (Benson and Lunt, 2011; Savery and Duffy, 2001). For inquiry-based learning the empirical cycle of observation, induction, deduction, testing, and evaluation should be followed. Hence teachers should be empowered to provide learners with opportunities to participate in authentic and context dependent activities (Brown et al., 1989). In the context of LS, teachers should be able to develop and facilitate children's creativity through creative approaches to teaching and learning.

LS activities are by nature suitable for active learning or learning by doing which are emphasized in the recent educational reform efforts in Oman (Rassekh, 2004). In line with this argument, Scobey (1968)

argued that the content of industrial arts (and similar practical programs such as LS), needs to be learnt and experienced in an authentic context and as a method of teaching other school subjects. In order for teachers to be able to provide their students with authentic and context dependent activities in line with constructivist principles, higher education institutions should focus on incorporating these elements into their programmes of study inasmuch as teachers are expected to incorporate these aspects into the teaching of LS in schools.

One of the main objectives of LS is to guide students towards the world of work. In this respect, UNESCO (1974; 2002) and Rassekh (2004) assert that LS teachers in general education should be able to provide students with proper guidance related to various careers and jobs in the society. Moreover, they should be fully aware of the current and projected needs of the society. Adams and Pratzner (1987) maintain that the success of Vocational Education teachers depends on their consideration of the ever-changing demands of the society. This implies that LS teachers should be aware of the students' characteristics in the career awareness stage. The career awareness stage is the stage during which students explore the various vocations in the world of work so that they discover their abilities and inclinations to make well informed decisions concerning their future careers (Ulaimat, 1991; Moore, 1986; Hendrix, 1986). Moreover, according to these authors, LS teachers should be able to apply practical teaching methods necessitated by the nature of LS. In addition, they are required to use increasingly sophisticated equipment in the delivery of LS. Consequently, teachers must be trained to constantly keep current with the changes in knowledge and skills related to their subject areas. UNESCO (2002) and Rohaan et al. (2010) emphasised that teachers should be provided with flexible training and retraining programmes. These programmes should ensure continuous review and updating of their knowledge, competencies and skills in addition to continuous updating of specialised professional skills and knowledge. In this respect, higher education institutions can play a pivotal role by setting up specialized courses to empower LS teachers regarding these issues.

Several studies have been conducted on the areas outlined above (Tweisat, 1998; Al-Saydeh, 2002; Benson and Lunt, 2011; Gibson, 2007). Results from these studies showed poor provision in these areas and a lack of relevant content in the teaching of these curriculum areas, despite their importance. Consistent with these conclusions, Resnick (1987) argued in her presidential address to the American Educational Research Association (AERA) that it is not possible for students to become out-of-school learners as long as schools' provision of various curriculum areas focuses on individual forms of competence, on tool-free performance, and on de-contextualized skills.

Several studies have examined PVE teachers' ability to deliver PVE in Jordan (see for example Tweisat, 1998; Al-Saydeh, 2002; Al-Sa'aideh, 2008; Al-Hadidi, 1994; Salamah, 1994; Rawageh, 1994). These studies have attributed the schools' failure to link the curriculum content to the rest of the world, to non-conducive teacher education and training programmes and the failure of higher education institutions to prepare PVE teachers for effective teaching of the theoretical and practical aspects of PVE. In line with these results, Lewis (1992), and Henak (1991) found that industrial/technology teacher education curricula in the USA did not reflect current curriculum trends. Rogers (1996) found that industrial/technology teacher education lacked consistency in which technical courses were required. This inconsistency has resulted in the graduates of these programs possessing dissimilar bases of technical competencies, which will have a detrimental impact on the implementation of the technology education and industrial arts curriculum in the schools.

Despite extensive efforts by developed countries to prepare competent teachers to effectively deliver practical curricula similar to that of the LS in Oman, numerous problems have been revealed in this regard. The latest OFSTED report (OFSTED, 2007) provided a clear picture on the status of design and technology in England. The report identified the key areas that needed to be attended to. These include

teachers' limited expertise and confidence; schools' reluctance to allow teachers to attend staff development courses due mainly to shortage of funding; and the need to improve assessment, recording, and reporting of pupils' progress. In North Ireland, Gibson (2007) identified two groups of challenges that teachers face in the delivery of Design and technology. The first group of challenges relates to the management of teaching and learning within the subject; for example project work, health and safety, resources and staff support, both technical and financial. Other challenges focus upon class size, subject time allocation, recruitment and subject groupings, assessment and generally 'keeping things on track'. The second group of challenges relates to development within Technology and Design and these are focused upon the evolving nature of the subject and the need to keep up-to-date with the ever-changing subject content.

Based on the review of literature, the researcher concludes that there is a need for a comprehensive policy of teacher education specifically for LS teachers. Higher education institutions should come forward with new types of teacher education to open up the newer avenues being generated by the ever changing knowledge, skills and competencies characterizing contemporary societies.

Methodology

In order to assess LS teachers' perceptions regarding their own level of ability to handle the teaching of LS, this study employed a descriptive survey. Despite the difficulties of using this research design (the degree of clarity of questions, getting respondents to answer questions thoughtfully and honestly, and obtaining a sufficient response rate (Cohen, Manion & Morrison, 2000)), use of a survey enabled me to obtain a great deal of information from a large group of individuals (Robson, 2002).

The population of this study consisted of all LS teachers teaching in Oman (N=870). A Multi-Stage-clustered-random sampling approach was used to select all LS teachers teaching at five educational directorates (N=275) by using a 2010-2011 Ministry of Education directory that listed all LS teachers at schools in Oman (Ministry of Education, 2011). In the first stage of sampling, five out of eleven education directorates were randomly selected. In the second stage, a random sample of two counties (Wilayah) was taken from within each of the five education directorates chosen in the first stage. All teachers in the ten selected counties (Wilayat) were selected as a sample for the study.

A 53-item questionnaire was used to gather data regarding how satisfied LS teachers felt with their level of ability to deal with LS teaching related roles in school. The survey included two sections: demographic questions and items using a five-point Likert-type scale, designed to measure the LS teachers' perceived level of ability related to their roles and duties. The demographic section asked about gender, academic qualification, relevance of this qualification to LS, and the number of in-service training sessions related to LS teaching attended. The second section, the perception scale, was designed to obtain information about LS teachers' perceptions of their ability through their responses to 53 items, divided over six subscales. These subscales comprise:

Planning (six items e.g. "Understanding the general objectives of LS");

Execution (seventeen items, e.g. "Help students develop a strong work ethic";

Assessment (seven items, e.g. "Knowledge of appropriate assessment strategies in LS");

Technical Content (five items, e.g. "Ability to operate equipment in your classroom lab");

Vocational Counseling (eleven items, e.g. "Familiarize students with the available careers and services in the society");

Administrative Duties (seven items, e.g. "Manage your time effectively".

The questionnaire used in this study was adopted from Hill and Wicklein (2002) and then developed to suit the Omani context. In developing this adopted instrument, two topical areas in the original questionnaire (Pedagogy and Thinking skills) were merged under one area named Execution. Due to the importance of assessment as a teacher role, it was added to the developed questionnaire as a new topical area containing seven statements. Overall, twelve new statements were added to the adopted instrument. The range of the original scale in the adopted instrument was changed and the survey was administered in Arabic, the respondents' native language.. A panel of experts was used to establish content validity for the instrument. Members of the panel were selected because of their experience in LS, expertise in instrument development, expertise in the use of statistics, and expertise in translating the English language into the Arabic language. The panel examined all translated statements for appropriate language and word usage and made suggestions about item terminology to enhance clarity and brevity. LS teachers responded on a five-point Likert-type scale ranging from "completely satisfactory" (5 points) to "completely unsatisfactory" (1 point). In an effort to test the appropriateness of the language and word usage in the instrument, along with a determination of its validity and reliability, a pilot study was conducted. The LS teachers selected for the pilot study were not included in the main study. In addition to completing the instrument, the teachers were asked to circle any words they did not understand and to indicate any difficulties they had in completing the instrument. Modifications to the instrument were made with consideration given to the original intent of the instrument with the guidance of the panel of experts. Cronbach's alpha was used to assess the reliability of the perception measurement section of the instrument (Muller, 1986), and was found to be 0.86: this value is considered acceptable in educational studies (Cohen and Manion, 2000). The majority of the surveys (215 surveys) were distributed by LS supervisors who visit schools on a regular basis. This was done in collaboration with the technical office at the Ministry of Education in Oman. This process of collaboration reduced the amount of time and cost needed to administer the surveys. The rest of the surveys were distributed by the researcher to each LS teacher in the schools. Participation in the study was voluntary and responses were kept confidential.

Mean scores and standard deviations were computed for responses to each item on the questionnaire. Mean scores and standard deviations were then generated for each of the six topics addressed by the instrument. The responses were summarized in terms of teachers' responses to each of the six topical areas above: an area in which the average response for all items and all teachers was at least 4.50 were deemed "Completely Satisfactory" for the sample as a whole; an area in which the average response was from 3.50-4.49 were deemed "Satisfactory"; and so on. Tables were developed to present these results and are provided herein to allow interpretation of the data.

Results

The results showed that all LS teachers have been exposed to extensive training sessions on the implementation of LS activities. 254 (92%) LS teachers indicated that they have attended 10 or more in-service training sessions relevant to LS implementation. The remaining 21 (8%) LS teachers indicated that they have attended between 6 and 9 training sessions, showing the government's emphasis on in-service training due to the absence of pre-service LS teacher education programs.

Mean scores and standard deviations were calculated for each topical section of the instrument (see Table 1). For most sections, participants in the study rated their level of ability between the "unsatisfactory" and "satisfactory" range. To provide further detail in the analysis, mean scores were examined for each of the instrument items included in the questionnaire.

Table 1: Mean scores and standard deviations for topical sections of the questionnaire.

Topic	Mean	Std. Deviation	Rank
Planning	3.93	0.42	1
Assessment	3.76	0.46	2
Administrative Duties	3.71	0.66	3
Execution	3.62	0.45	4
Vocational Counseling	3.41	0.36	5
Technical Content	3.24	0.50	6
Total	**3.6**	**0.33**	

The topic covered by the questionnaire that achieved the highest mean score for responses was Planning (see Table 1) with an overall mean of 3.93 and individual item mean scores ranging from 2.45 to 4.35. Within the Planning category, the item related to preparing a lesson plan in LS had a mean score rating of 4.30; operational formulation of educational objectives in LS had a mean score of 4.15; use of ICT (computers and internet) in the planning for the delivery of LS activities had the lowest mean scores of 2.45 (see Table 2).

Table 2: Mean rating and Standard Deviation for Planning items (ranked descending).

Questionnaire Item	Mean	SD
Prepare a term plan for LS lessons and activities	4.35	0.79
Ensuring a balance in the distribution of the educational objectives relating to cognitive, affective, and psychomotor domains	4.31	0.76
Prepare a lesson plan in LS	4.30	0.83
Operational formulation of educational objectives in LS	4.15	0.77
Understanding the general objectives of LS	4.05	0.70
Use of ICT (computers and internet) in the planning for the delivery of LS activities	2.45	1.01

Responses to instrument items concerned with Assessment had an overall mean score of 3.76, occupying the second rank (see Table 1). Individual items related to "Consideration of students' individual differences" and "Ensuring validity reliability, objectivity, and comprehensiveness in the design of students' assessment tools" fell in the high-range of responses for this section of the instrument with mean scores of 4.04 and 4.02 respectively (see Table 3). Mean scores for instrument items related to "Use of assessment results as a feedback to identify the problems facing the students" and "use of analytical and descriptive statistics to describe students' test results" had the lowest rating in this section with mean scores of 3.78 and 2.69 respectively.

Table 3: Mean rating and Standard Deviation for Assessment items (ranked descending).

Questionnaire Item	Mean	SD
Consideration of students' individual differences	4.04	0.81

Ensuring validity reliability, objectivity, and comprehensiveness in the design of students' assessment tools	4.02	0.82
Considering good specifications in the design of examination questions	3.96	0.81
Preparing appropriate assessment tools to measure students' knowledge skills and attitudes	3.95	0.80
Knowledge of appropriate assessment strategies in LS	3.87	0.79
Use of assessment results as a feedback to identify the problems facing the students	3.78	0.87
Use of analytical and descriptive statistics to describe students' test results	2.69	1.19

Administrative Duties, as a topical area in the questionnaire, had an overall mean score of 3.71 for responses recorded, occupying a relatively high rank order (third) among all the topical areas in the questionnaire (see Table 1). The individual item related to "Manage purchasing procedures and requests for materials, supplies, and equipment" had the lowest mean score of 2.72. The mean score rating for the rest of the items in this section fell in the "Satisfactory" category for the questionnaire with mean scores ranging from 3.58 to 4.27 (see Table 4).

Table 4: Mean rating and Standard Deviation for Administrative Duties items (ranked descending).

Questionnaire Item	Mean	SD
Establish a professional, supportive relationship with other teachers and support staff	4.27	1.02
Manage your time effectively	3.90	1.02
Work with school administrators when dealing with discipline problems	3.87	1.01
Enforce schools' regulations and rules when dealing with discipline problems	3.87	0.94
Solve classroom problems without outside assistance	3.78	1.02
Appropriately document and record instances of discipline problems	3.58	0.93
Manage purchasing procedures and requests for materials, supplies, and equipment	2.72	1.23

For questionnaire items relating to teachers' view of their own ability to deal with issues related to Execution, the overall mean score was 3.62 (see Table 1); it occupied the fourth place among the topical areas in the questionnaire. In this section of the questionnaire, the items related to "help students develop a strong work ethic" and "adherence to the standard safety procedures in the delivery of LS activities" had the highest mean score of 4.20 and 4.15 respectively whereas items like "implement instructional strategies which emphasize critical thinking" and "Use of ICT (computers and the internet) in the delivery of LS" had the lowest mean scores of 2.35 and 2.25 respectively (see Table 5).

Table 5: Mean rating and Standard Deviation for Execution items (ranked descending).

Questionnaire Item	Mean	SD
Help students develop a strong work ethic	4.20	0.88

Adherence to the standard safety procedures in the delivery of LS activities	4.15	1.04
Develop student interpersonal skills	4.10	0.86
Encourage students to show initiative	4.10	0.92
Use of appropriate approaches to prepare students for instruction	3.98	0.80
Encourage good character in students as part of your instruction	3.98	1.00
Ability to relate students' learning experience at school to their daily-life activities	3.96	0.83
Linking LS objectives with the general objectives of education	3.95	0.90
Teach students to be independent	3.93	0.89
Emphasis on the integration of LS with other school subjects in the delivery of LS	3.79	0.85
Emphasis on enabling students to link the concept of economy with productive work	3.65	0.92
Accommodate the instructional needs of most of your students	3.64	0.90
Devise units/lessons which encourage creative thinking skills in students	3.58	0.87
Use of instructional drama in the delivery of LS activities	3.42	1.13
Use of practical demonstration method in the delivery of LS	2.65	1.13
Implement instructional strategies which emphasize critical thinking	2.35	0.98
Use of ICT (computers and the internet) in the delivery of LS	2.25	1.05

Vocational counseling, as a topical area on the instrument, had an overall mean score of 3.41 for responses recorded, occupying a low rank order (fifth) among all the topical areas in the questionnaire (see Table 1). The mean score rating for all items in this section fell in the above mid-range rating category for the questionnaire (see Table 6). Individual items related to "Familiarize students with the available careers and services in the society" and "Familiarizing students on how to develop a concept of self about themselves" had the mean score of 4.04 and 4.04 respectively (see Table 6). Mean scores for instrument items related to "Accommodating students' needs in the career orientation stage" and "Identifying students' needs in the career orientation stage" had the lowest rating in this section with mean scores of 2.38 and 2.25 respectively.

Table 6: Mean rating and Standard Deviation for Vocational Counseling items (ranked descending).

Questionnaire Item	Mean	SD
Familiarize students with the available careers and services in the society	4.04	0.87
Familiarizing students on how to develop a concept of self about themselves	4.04	0.87
Promoting students' career development through the course content	4.02	0.75
Familiarize students with the physical and mental requirements of various careers and services in the society	3.91	0.94
Helping students to cope with problems outside of the classroom	3.84	0.99

Identifying students' mental characteristics in the career orientation stage	3.58	0.71
Identifying students' physical characteristics in the career orientation stage	3.47	0.81
Identifying students' psychomotor development	3.47	0.85
Use of computer and Internet in career counseling and guidance	2.53	1.06
Accommodating students' needs in the career orientation stage	2.38	0.89
Identifying students' needs in the career orientation stage	2.25	0.96

Of all the topics addressed by the questionnaire, the mean score for responses related to Technical content was the lowest of all: 3.24 (see Table 1). The items related to "ability to operate equipment in your classroom lab" and "explain the technical process included in the courses you teach" achieved the lowest ratings with mean scores of 3.16 and 3.04 respectively. The rest of the items in this section had mean scores ranging from 3.31 to 3.36 (see Table 7).

Table 7: Mean rating and Standard Deviation for Technical Content items (ranked descending).

Questionnaire Item	Mean	SD
Maintain and repair equipment in your classroom lab	3.36	1.24
Teach students about the various technologies covered in your course	3.33	1.05
Use the equipment in your classroom lab for effective instruction	3.31	1.16
Ability to operate equipment in your classroom lab	3.16	1.23
Explain the technical process included in the courses you teach	3.04	1.06

Discussion

The highest mean scores for instrument item responses were in the areas of Planning (3.93) and Assessment (3.76), which fell in the "satisfactory" classification on the rating scale. Additionally, the Vocational Counseling category yielded the lowest standard deviation score of all the categories on the instrument, 0.33 and the Planning category yielded a relatively low standard deviation score of 0.42, indicating general consensus on these teacher competency areas. The LS teachers viewed themselves as being able and competent with regard to the skills covered in the topical sections of Planning, Assessment, Administrative Duties, and Execution. These categories yielded mean scores of 3.93, 3.76, 3.71, and 3.62 respectively, which represent a rating of "satisfactory" in working with these LS delivery concerns.

On the other hand, LS teachers viewed themselves as less competent in the topical areas of Vocational Counseling and Technical Content. These two categories yielded mean scores of 3.41 and 3.24, respectively, which represent a rating of "moderate" level of competence in working with these LS delivery concerns. The participants overall did not view themselves as competent or having adequate skills to confront the Vocational Counseling and Technical Content that they are encountering as LS teachers. One of the main components of LS is career guidance and counseling. This component was introduced to provide students with occupational information related to various careers and services in the society. This is to be achieved through explorative activities and using hands-on experiences that allow students to discover their interests and inclinations and consequently make an informed decision

regarding their post-16 career paths. The results from this study suggest that LS teachers' moderate level of competence related to this area will, to some extent, hinder the achievement of LS objectives in this important area.

The topical section Technical Content area (e.g., teach students about the various technologies covered in your course, operation of equipment, explanation of technical processes, maintenance of lab equipment) is one of the most prominent aspects of the LS curriculum. The LS teachers' rating of themselves in this area fell into the "moderate" level of ability with a mean score of 3.24. This area reflects an important aspect of the teaching/learning environment in LS. Rohaan et al (2010), Tweisat (1998), Al-Saydeh (2002), Al-Sa'aideh (2008) and Gibson (2007) have reported the difficulty PVE and technology education teachers have with regard to the use, repair and guiding the instruction in the Technical Content area.

The results of this analysis provided a mixed perspective regarding the level of competence of LS teachers to perform their teaching roles. LS teachers felt that they are most competent to address the areas of Planning, Assessment, Administrative Duties and Execution. LS teachers' level of competence fell in the equivalent of a "satisfactory" classification in these four areas. However, their level of competence scores in the "moderate" range in the areas of Vocational Counseling and Technical Content. Overall, the results indicate that LS teachers' self-perceived level of competence falls in the satisfactory level (M=3.60). These results are not consistent with the results of the past studies which examined LS teachers' ability to deliver similar programs in Jordan and Northern Ireland (see for example Tweisat, 1998; Al-Saydeh, 2002; Al-Sa'aideh, 2008; Al-Hadidi, 1994; Salamah, 1994; Rawageh, 1994; Gibson, 2007).The questionnaire item "Implement instructional strategies which emphasize critical thinking" received an unsatisfactory rating by LS teachers with mean score of 2.35. Similarly, in the Sultanate of Oman, Al-Nofli (2010) found that the teachers' delivery of social studies did not support students' critical thinking abilities.

An important result revealed in this study was that related to LS teachers' ability level in the area of ICT. All the questionnaire items representing this crucial area scored means ranging from 2.25 (see Table 5) in the area of Execution to 2.69 (see Table 3) in the area of ICT use for Assessment. This mean range represents "unsatisfactory" to "moderate" ability level regarding LS teachers' use of ICT in the implementation of LS activities. Similar findings regarding teachers' general level of ICT competence have been revealed in other studies conducted in Jordan (Naddaf, 2002; Al-Momani, 2004).

Information and Communications Technology (ICT) has great potential to aid teachers to adapt to their role shift. For instance, teachers' inquiry can be facilitated with the help of computers as it provides access to vast amounts of information. Through the use of E-mail, user groups, and other online forms LS teachers will have the opportunity to communicate and share their experiences with a much wider range of colleagues and experts in the field of LS. The World Wide Web can facilitate teachers' access to digital libraries and vast amounts of information in printed, visual and video form. Video conferencing offer the LS teachers the opportunity to observe other teachers in different countries as they implement similar curriculum areas and learn from their expertise (Safari, 2011; Abuhmaid, 2011; Resta et al, 2002; Saud et al., 2011). Nonetheless, the use of ICT cannot be fully effective unless teachers receive adequate training and support. Their skills and competencies should be continuously updated to keep current with the most recent innovations in this area so they can transfer these competencies to students (Resta, et al, 2002 ; Reid, 2000; Rohaan et al, 2010). To enable teachers to make full use of ICT, pre and in-service teacher training institutions should undertake a more active role with regard to teacher training that goes beyond the development of basic ICT literacy skills to educationally oriented training on ICT (Abuhmaid, 2011). This entails that teacher educators and trainers should model the

appropriate use of ICT in the delivery of the curriculum of teacher education and training programmes inasmuch as LS teachers are required to incorporate ICT into their own teaching of LS at schools (Mc Cormick, 2004).

Conclusion and implications for Higher Education institutions

This study yielded interesting results considering the absence of pre-service LS teacher education program. In general, LS teachers viewed their level of competence in the possession of LS skills as satisfactory; in other words, they perceive that their in-service training programs equipped them for the realities of the classroom and other related teaching-learning environments suitable for the delivery of LS activities. However, there appears to be ample room for improvement in some areas which should be emphasized in any teacher education and training program to be set up and conducted in the future. In addition to empowering LS teachers to effectively incorporate ICT tools in their instruction, teachers' ability in Vocational Counseling and Technical Content areas relating to LS delivery need further attention. LS is a subject that has been introduced to the basic cycle of schooling in the Sultanate of Oman to guide pupils to the world of work and to facilitate their choice of future careers by the end of this cycle. Therefore, LS teachers' instructors at higher education institutions should be aware of career counseling and guidance methods to equip LS teachers with these skills. Moreover, the curriculum content in higher education institutions should emphasise the notion of career counseling and guidance within its boundaries. One of LS teachers' roles is to maintain and service the various workshop facilities at schools. To enable those teachers to carry out these processes effectively, higher education institutions should be able to equip LS teachers with the necessary maintenance competencies.

There is a need to have a comprehensive policy of teacher education in the Sultanate of Oman. Higher education institutions should come forward with new models of teacher education to meet the newer challenges being generated by the Knowledge Society of tomorrow. Teacher educators have to bring professionalism and due rigor to the process of preparing teachers. Unless teacher educators demonstrate to prospective teachers in concrete terms the diverse possibilities in seeking information, effective communication, teaching methodologies and techniques, evaluation and innovation, the teachers will continue to struggle, with sub-optimal ability levels in the delivery of practical subjects such as LS. Higher education institutions need total transformation toward an ICT approach to teacher education and training, to infuse confidence in prospective teachers to integrate these technologies by demystifying them.

Due to the practical nature of LS, the Ministry of Education and higher education institutions in Oman should explore alternative approaches to any prospective pre-service and in-service LS teacher education and training and, in particular, consider ways to apply the principles of constructivism to teacher education and training. Since LS content in the students' textbooks cannot be learned in the absence of a proper context; that is facilitating students' learning through real and authentic problems (Fox-Turnbull & Snape, 2011). Hence, to be able to deliver LS activities, teachers should be educated and trained through context dependent activities emulating as much as possible authentic practice in the real world. Jarvis and Rennie (1998) emphasized a need for special curriculum provision in technology in the UK and Australia based on adequate in-service training of teachers. Such in-service training should empower teachers with knowledge and skills so that they can help students clarify the relations between science and technology in addition to enabling them to clarify their ideas through context dependent activities.

Planned and systemic efforts should be continuously pursued by higher education institutions to gather feedback from teachers in schools, so that effectiveness can be monitored and the needs of the LS

teachers and the students they serve more fully met. The results of these efforts should be utilized to continuously update the content and methods of delivery of teacher education and training programs. Qualitative research strategies should be employed to determine specific reasons for the difficulties teachers are experiencing in the public schools and to seek suggestions for improvements in the teacher preparation programs.

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