Strategic Planning Framework for Assessment of 21st Century Skills in Developing Countries

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Abstract

As globalization and international competition intensifies, students in both developed and developing economies need to be prepared from an early age to meet global challenges. They should be equipped with skills such as critical thinking, problem solving, creativity and collaboration which have become critical for success in the global economy. Assessment of the above skills, which are often referred to as 21st century skills, is truly important but how can it work effectively in developing countries where a large proportion of school systems are characterized by unskilled and uncommitted teachers as well as insufficient funding. Thus, the school environments do not support teaching and assessment of 21st century skills. However, given the growing need for these skills, developing countries must adapt in order to prepare their students for success in the 21st century, enhance their economic growth and improve their competitiveness. Capacity building plans for assessment of 21st century skills should be relevant and effective. This paper discusses a strategic planning framework that will assist developing countries in creating meaningful and useful plans for building capacity for assessment of 21st century skills.

Keywords: Strategic planning; Assessment; 21st century skills; Developing countries

Introduction

The future growth and competitiveness of any nation depends on the ability of its educational system to produce citizens who can face the challenges of the 21st century. Preparing students for success in the 21st century, which is characterized by access to an abundance of information, intensive global competition and fast change, involves equipping them with skills such as information processing, critical thinking, problem solving and collaboration, along with core academic subject knowledge.

The above skills which are referred to as "interaction-intensive" or "non-routine interactive" skills are said to be in high demand in the 21st century (Levy, 2010). This is not only true for developed countries but also for developing countries. As economies develop, the job market shifts from low interactive occupations to higher interactive occupations (CISCO, 2005). Thus, what students of every economy need to succeed in the 21st century is a blend of core academic subjects (such as mathematics, physics and economics) and 21st century skills. However, developing countries are faced with numerous challenges that limit their ability to successfully prepare their students for success in the 21st century. Some of these challenges include inadequately qualified and motivated teachers; inadequate funding of the education sector and existence of traditional learning environments which cannot inspire today's learners or facilitate learning of 21st century skills. It is anticipated, however, that developing countries can gradually overcome these challenges and improve their ability to teach and assess the skills that students need to succeed.

The improvement process can be facilitated by tools such as strategic planning - a process of setting a long-term direction based on thorough analysis and sound predictions. Examination bodies in many developing countries already engage in annual 'strategic planning' activities. However, this annual ritual, in many organisations, lack real strategy and their outcomes cannot address the demands of this complex, fast-changing century. A real strategy is neither a document nor a forecast but rather an overall approach based on diagnosis of a challenge, hence, the most important element of a strategy is a coherent viewpoint about the forces at work, not a plan (Rumelt, 2008). In order to build capacity for assessment of 21st century skills, the organisations must identify and properly diagnose this challenge (from global and local perspectives) as well as develop clear understanding of what is possible and what is not possible for them. These will enable organisations design action plans that are both feasible and useful in their unique environments.

This paper proposes a framework that can help examination organisations in developing countries design the changes required for assessment of 21st century skills as well as implement the changes effectively and efficiently. Although there may be other agencies that should be involved in the march towards 21st century skills teaching and assessment, assessment organisations have special powers, which should now be leveraged. For example, assessment has a strong influence on curriculum and instruction. A long line of research has shown that, for good or ill, examinations can drive instructions in ways that mimic both the content and format of tests (Madaus et al, 1992). Because of the pressure for passing scores, more and more time is spent practicing the test and putting everything in the test format (Haney, 2000). This paper therefore encourages assessment bodies in developing countries to build capacity for assessing the skills so that from their ends, they can move their education systems towards 21st century skills learning.

Key Challenges Facing Examination bodies in Developing Countries

While examination bodies in different countries face unique challenges due to their local conditions, there are several cross-cutting challenges. First, there are numerous reports of leakages in the examination system and fraudulent practices (World Bank, 2008). Indeed examination malpractice, with its multiple participants - students, parents, teachers, school authorities - remains a key challenge for many examination bodies. These problems are compounded by the inadequacy of qualified, motivated, respected and reputable educators and assessors in the system.

Secondly, the education system is not well-funded. As a result, teachers' conditions of service are not attractive to intelligent and talented people who are highly needed in the education sector. The condition can also not motivate existing teachers to undertake the heavier tasks involved in preparing students for success in the 21st century (Okpala, 2014). In addition, many schools cannot afford the kind of infrastructure and learning environments that can support 21st century learning.

Thirdly, current assessment practices in many countries do not support 21st century learning. Tests are designed to assess lower order thinking skills. There is relative lack of assessments designed to measure higher order thinking skills (analysis, synthesis and evaluation). Thus, currents tests hardly assess learning outcome in such things as applying knowledge to new situations or communicating ideas. Since teachers prepare students to succeed in examinations, they end up training students to memorise and regurgitate facts. Also, the assessments are mainly focused on core subject areas such as mathematics, physics and economics. Educators and assessors are yet to begin to intentionally integrate 21st century skills into the teaching and assessment of core academic subjects.

Fourthly, there is inadequate alignment between curriculum and assessment. This lack of alignment is seen as a hindrance to implement modern teaching and learning practices as intended and can be attributed to lack of communication and corporation between agencies at the national level (World Bank, 2008). It also shows weak institutional capacity.

Strategic Planning

A strategy is a cohesive response to a challenge (Rumelt, 2008). This implies that a strategy takes into account the organisation's resources such as its people, finance, technology, etc.; existing and potential barriers to success; and alignment with organisation's overall vision and mission. Thus, strategic planning is an organisation's process of defining its long term direction and generally involves:

1. analysis of the current state (including internal and external environments)
2. validating the organisation's mission and vision and making strategic decisions around them
3. creating specific, measurable, realistic, time-bound and challenging objectives as well as corresponding targets to realize the mission and vision
4. determining the actions and resources required to achieve the objectives and targets

5. developing performance plans to evaluate the success of the strategic plan and make necessary improvements

A common question raised in the public-sector (where many examination organisations belong) is *"Must we engage in real strategic planning since they are not after financial profits?"* Of course, the key metric for performance in government organisations is not financial in nature, but rather *mission effectiveness* (Averson 1999), but what it takes an examination body to deliver its mandate in an effective, efficient and globally competitive manner is not definite and static. Major characteristics of the 21st century include fast change and complexity. This implies that organisations (whether public or private) must increase their decision making pace as well as the quality of their decisions in order to succeed in the 21st century. For examination bodies, especially those in developing countries, realising the dream of 21st century skills assessment certainly requires real strategies and realistic planning.

Averson (1999) summarises the similarities and differences of strategy between public and private sector organisations in the following table.

Table 1: Comparing strategy in private and public-sector organisations

Strategic Feature	Private Sector	Public Sector
General Strategic Goal	Competitiveness	mission effectiveness
General Financial Goals	profit; growth; market share	cost reduction; efficiency
Values	innovation; creativity; good will; recognition	accountability to public; integrity; fairness
Desired Outcome	Customer satisfaction	Customer satisfaction
Stakeholders	stockholders; owners; market	taxpayers; inspectors; legislators
Budget Priorities Defined by:	customer demand	leadership; legislators; planners
Justification for secrecy	protection of intellectual capital; proprietary knowledge	national security
Key Success Factors	growth rate; earnings; market share	best management practices
	Uniqueness	sameness; economies of scale
	advanced technology	standardized technology

Strategic Planning Framework for Examination Bodies in Developing Countries

Based on the foregoing, a simple structured approach to strategic planning is developed for examination bodies (Figure 1). The framework answers the following four critical questions:

1. Where is the organisation now?
2. Where does the organisation want to be?
3. How can the organisation get there?
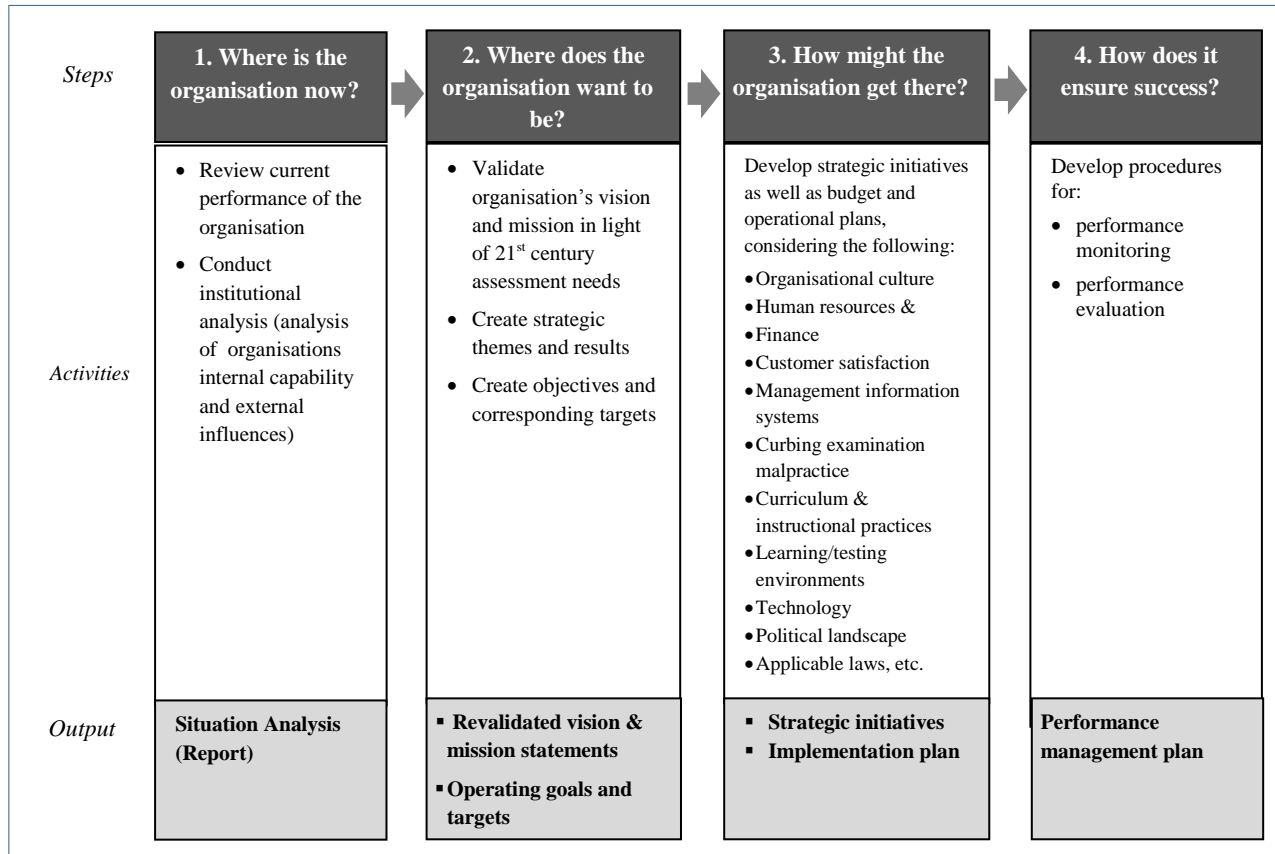4. How can the organisation ensure success?

Steps	1. Where is the organisation now?	2. Where does the organisation want to be?	3. How might the organisation get there?	4. How does it ensure success?
Activities	• Review current performance of the organisation • Conduct institutional analysis (analysis of organisations internal capability and external influences)	• Validate organisation's vision and mission in light of 21st century assessment needs • Create strategic themes and results • Create objectives and corresponding targets	Develop strategic initiatives as well as budget and operational plans, considering the following: • Organisational culture • Human resources & • Finance • Customer satisfaction • Management information systems • Curbing examination malpractice • Curriculum & instructional practices • Learning/testing environments • Technology • Political landscape • Applicable laws, etc.	Develop procedures for: • performance monitoring • performance evaluation
Output	**Situation Analysis (Report)**	▪ **Revalidated vision & mission statements** ▪ **Operating goals and targets**	▪ **Strategic initiatives** ▪ **Implementation plan**	**Performance management plan**

Figure 1: Strategic planning framework for improving capacity for assessment of 21st century skills

Where is the organisation now?

This step is concerned with conducting a detailed analysis of the organisation's current state in terms of performance and institutional aspects. Performance review requires an examination body to comprehensively analyse its current assessment practices, measured against key performance indicators. Institutional analysis, on the other hand, requires a thorough understanding of the organisations internal capability as well as its external environments - legislators, customers (schools/students), suppliers, etc. An Analysis of the internal capability is important as it provides insights into the areas of strength and inherent weaknesses within the organisation. It also promotes understanding of where the core capabilities of the organisation lie so that the best courses of action can be identified. Analysis of internal capability involves asking fundamental questions such as *'do we have (or can we get) the human resources, finance and technology required to design, develop and conduct examinations that embed 21st century*

skills?' In the same vein, monitoring of the external operating environment is necessary as it helps to identify any influences that may require action. It involves asking and seeking answers to questions such as '*What are the relevant policies and laws*?' and '*who are our key stakeholders and how can they impact our assessment of 21st century skills?'* Any organisation that fails to take the external factors into account while developing its plan may encounter serious operational problems or even failure of the entire organisation.

The information required for situation analysis can be obtained from a variety of sources including review of publicly available documents, interviews and other primary research techniques. Also, tools such as SWOT (Strengths, Weaknesses, Opportunities and Threats) as well as PESTEL (Political Economic Social Technological) could help organisations understand and summarise their performance gaps. A SWOT analysis identifies the organization's strengths, weaknesses, opportunities and threats, and enables the organisation to determine the set of key success factors, i.e. those activities or areas in which it must be especially proficient to succeed by fully exploiting the opportunities available to it and combating the threats that endanger it (Boseman and Phatak, 1989). PESTEL analysis on the other hand, provides a framework for investigating and analysing the external environment for an organisation. It identifies six key areas that should be analysed when attempting to identify external sources of change. These six areas are: political, economic, social and technological, environmental and legal. The information obtained from situation analysis are valuable input in determining where the organisation wants to be.

Where does the organisation want to be?

This stage is concerned with laying out the things that need to happen in order to achieve the organisation's vision and mission. Although many examination bodies already have vision and mission statements, a critical question that the organisations should ask is '*Is our vision and mission broad enough to encompass the pursuit of 21st century assessments?'* Indeed, after a thorough revalidation, some organisations may find need to develop new vision and mission statements while others would need to revamp their existing ones in light of 21st century requirements. These tasks are imperative because the vision and mission statements provide a basis for developing subsequent aspects of the planning process.

Based on the agreed vision and mission, the organisation creates its strategic themes (i.e main focus areas or pillars of excellence). It is appropriate that the assessment of 21st century skills be one of the strategic themes of every examination body. Based on this strategic theme, objectives and corresponding targets (smaller objectives) are then created with a view to close the gap between the current situation and the dream of assessing 21st century skills. Objectives specify how much of what will be accomplished by when. For example, one of several objectives for examinations bodies intending to pursue 21st century assessment might be: to develop 500 (how much) mathematics test items that embed 21st century skills (of what) by 2015 (by when).

Nagy & Fawcett (2013) suggest that organisations may develop objectives in 3 categories - *Behavioral objectives*, which are objectives that look at changing the behaviors of people (what they are doing and saying) and the products (or results) of their behaviors; *Community-level outcome objectives*, which are objectives related to behavioral outcome objectives, but are more focused more on a society level instead of an individual level; and *process objectives*, which are

objectives that refer to the implementation of activities necessary to achieve other objectives. Regardless of the category, every objective should be acceptable to participants, flexible, motivating, suitable and understandable (Pearce and Robinson, 2003). In addition, objectives should:

a. address the identified weaknesses of the organisation, reinforce its strengths, seize opportunities and mitigate against the effects of perceived threats.

b. have corresponding targets (small tasks that need to be done in order to achieve the objectives)

c. and targets are SMART (specific, measurable, achievable, realistic and time-bound) in order to allow the changes to be tracked and measured in a way that can show whether desired changes are actually occurring or not

d. be challenging and in line with the organisation's vision and mission

These qualities improve the chances that the objectives will be attained.

How can the organisation get there?

Having set the objectives and corresponding targets, it is important to lay out the actions required to reach the performance objectives and targets. The organisations proposed actions should minimise stakeholder resistance and other barriers to success. It should also fit organisations resources, core capabilities and opportunities. Organisations must understand what is possible for them and what is not possible. This understanding is very important as it helps to avoid designing actions that are dependent upon areas where the organisation lacks capability. Thus, questions such as the following can guide implementation planning:

- What resources and assets exist (or can we acquire) that can be used to achieve the vision of 21st century assessment? How best can they be combined to yield optimal results?

- What obstacles (political, economic, social, technological or legal) could make it difficult to achieve our vision of 21st century assessment? How can we eliminate/minimize their impact on our vision?

The above implies that laying out the actions involves making a variety of managerial and operational decisions covering all factors that impact on the organisations work such as organisational structure and culture, human resources, finance, customer satisfaction, management information systems, combating examination malpractice, curriculum & instructional practices, learning/testing environments and technology.

How does the organisation ensure success?

This step is concerned with deciding how the implementation of the actions for 21st century skills assessment will be monitored and evaluated. It is important to ask:

- How do we know whether people are doing what they should be doing and how well they are doing those things?
- Are the assumptions/predictions on which the actions are based still valid?

- How can we discover any events inside or outside the organisation that are likely to affect our strategic plan?
- How can we communicate progress to our stakeholders?

It is important to set standards of performance in the plan so that by continuously seeking answers to these questions, organisations can have necessary feedback that will allow comparison of progress to date with expected progress as well as identification of deviations from set standards. This information will help organisations in making necessary adjustments and corrections in a timely manner.

The Benefits of Strategic Planning

Among other benefits, strategic planning provides:

1. a shared vision of the 21st century skills assessment and an understanding of the objectives and strategy for building the required capacity

2. Strong strategic themes and SMART and challenging objectives aligned with the vision for the assessment of 21s1st century skills.

3. accountability and transparency in the plans, thus increasing stakeholder understanding and buy-in.

4. clarity about what projects to invest in to realize the vision of assessing 21st century skills. Indeed, strategic planning provides management with a disciplined way of prioritizing competing projects under stringent budgets. This ensures that an organisation's limited financial and people resources are focused on truly important projects.

5. a base from which progress can be measured (i.e. comparison of actual performance with expected performance) as well as procedure for making change when needed.

Implementing the Framework: Constraints and Way Forward

Below are some constraints that examination bodies may experience in adapting the framework described in this paper. Some suggestions have also been made on how to overcome the constraints.

Table 1: Framework implementation constraints and way forward

S/N	Challenge	Way Forward
1	Strategic planning generally requires the use of analytical tools and skills. However, examination bodies are typically dominated by educators and assessment experts who often lack the necessary knowledge and skills required to carry out strategic planning	▪ Engage senior and middle management officials in relevant short courses to build capacity for carrying out strategic planning

S/N	Challenge	Way Forward
2	Many examination bodies in developing countries are civil service-oriented. Thus, introducing strategic planning may face some resistance.	▪ Analyse existing and probable barriers as well as concerns of key stakeholders and build strategies to mitigate resistance ▪ Involve employees and stakeholders in the strategic planning
4	Strategic planning for assessment of 21st century skills requires adequate financial resources. Unfortunately, some examination bodies may not be buoyant enough to implement the framework	▪ Develop strategies to enhance private sector and encourage other external funding organisations to participate in funding the initiative

Conclusion

This paper has attempted to provide a strategic planning framework which examination bodies in developing countries can follow to prepare relevant and useful plans for improving their capacity to assess 21st century skills. The paper focused on developing countries because of their numerous and complex challenges that prevent them from assessing 21st century skills in a valid and reliable manner. Some of these challenges include: inadequate funding; inadequate number of qualified, motivated and reputable educators and assessors; poor assessment practices that do not support 21st century assessment; and leakages in the examination system and fraudulent practices. However, the authors believe that management of examination bodies in developing countries can cut through these challenges and move their education systems towards 21st century assessment if they can plan and manage the change process strategically. The framework proposed in this paper is a simple and structured approach to strategic planning. It leads organisations to provide detailed and holistic answers to four critical questions (1. Where is the organisation now? Where does the organisation want to be? How can the organisation get there? How can the organisation ensure success?). The answers generated will form effective road maps for building the required capacity for assessment of 21st century skills.

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