BRIEF COMMUNICATION

LEARN HOW TO LEARN

Imaginative, Innovative, and Creative Curriculum (IICC)

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1. INTRODUCTION

We are living in a world which is complex and fast changing. This is an epoch in which the world depends on the use of high levels of knowledge and skills. There is a need to build a knowledge based society to address the current complex and fast changing world.

Education is a valued asset for economic, social and cultural development. Literature clearly shows that the development of nations depends on the capacity of individuals and peoples to be imaginative to continually adapt and invent in a fast changing and complex world. It is to develop the know how of concepts and practices of the physical and social world. This capacity needs to be enhanced by key skills like numeration, information technology (IT), communication, team work, self-management and problem solving (Diamond 1998, Biggs 2003, The Higher Education Academy 2006).

'Knowledge has surpassed machines and the stored value of money itself, as the driving force behind the world economy. In the recent past companies learned they could create better products more efficiently with the full mental participation of their employees (http://www.corpgov.net,2006).

Cognizant of the above fact, many countries are now investing in education. But, it seems traditional educational approach is not helping to improve poor countries development need (MoE 1997, FDRE 2002, Jeffry and Craft 2001, Bingham 2006, World Bank 2005). Therefore there is a need to develop an education philosophy and strategy that could address the development needs of poor countries and the means of permeating it into higher education.

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In view of this, an attempt is being made to develop an educational strategy that could address the needs of the different stakeholders of higher education in this country.

In order to design a new curriculum, there is a need to identify the contemporary issues in higher education which is expected to have a role in addressing the development needs of a country.

- What are the contemporary issues in higher education in the country?
  - it is not development oriented
  - it is not contributing to improve the lives of society
  - it is not linked directly with employability
  - it lack imaginative discipline/subject culture
  - it lacks vocational/professional culture
  - it lacks institutional learning and teaching policy
  - it lacks entrepreneurial orientation
  - it is not research oriented
  - it lacks institutional mission
  - poor quality and standards
  - poor attitudes/values

- As a result,
  - Students :
    - are not imaginative
    - have poor motivation
    - have poor knowledge, skill, confidence, and commitment
    - have poor key skills: numerical, communication, IT and computer
    - have limited preparation for lifelong learning and continuous professional development
    - are ill prepared to the world of work
  - Institutions :
    - do not have creative/problem solving curriculum
    - have poor preparation for the advent of mass higher education
    - are ill prepared to deal with the pressure for a change in a world that is constantly changing
    - are ill prepared to meet global competition
    - are not doing more with less

It seems these issues are also prevalent in other countries (Diamond 1998, Biggs 2003, Bingham 2006, The Higher Education Academy 2006).

2. Principles

The following are important principles which could assist in developing the new curriculum, in light of the above issues

- Who should be involved in the design of the curriculum

- believing education is a means to improve the lives of society and for national development, there is a need to be inclusive by involving the following stakeholders during curriculum preparation
  - society/community
  - the learner
  - teachers
  - professional bodies
  - policy makers
  - consumers/employers
  - learning institutions
  - civil society.

- What are the bases for curriculum preparation
  - it should be need based of (the different stakeholders) as above, through study based evidence
  - society/community
  - the learner
  - teachers
  - consumers
  - policy makers
  - learning institutions
  - professional associations

With these context and principles a curriculum could be conceptualized that could address the needs of all stakeholders.

3. Concept, Philosophy and Rationale

The issues of our educational system are the outcomes of the prevailing traditional education approach. This approach has been in use over half a century but to no avail. This was attested by indicators of development (World Bank 2005). As stated above, education is a means of development. Hence, there is a need to transform our learning approach. Think of an approach that could address the above educational issues.

- What sort of curriculum could address the serious issues that challenge higher education like employment, entrepreneurship, responding to the needs of society and nation building?
  This involves interpreting the issues that are recognized and perception of their relationships. This helps to frame and explain issues.

- To address this issue countries have adapted various new approaches to their educational system: 'innovative America', 'creative Europe', that implies a radical change (Council on Competitiveness 2004, Bingham 2006, EUA 2007, Illinois Mathematics and Science Academy 2007, McMaster University 2007, University of Maastricht 2007, Lisbon European Council 2000, Barcelona European Council 2002).The strategies include imaginative, innovative, creative, inquiry, problem based, etc. approach. The experience of Jimma University is also

in line of this approach (Asefa 2000). In the past, imaginative, innovative, creative ideas were in the domains of the few, but, today it is a necessity for all. The idea that all of us could be creative given the right environment is universal (Jeffery and Craft, 2001).

It is known that there are various strategies for the new curriculum bearing different names such as imaginative, innovative, creative, problem-based, inquiry-based etc. These new change based curricula commonly share the core idea that learning is the responsibility of the student, that is, it is 'student-centered' (McMaster University 2007, University of Maastricht 2007, Illinois Mathematics and Science Academy 2007, The Higher Education Academy 2006). Jimma University (JU), the then Jimma Institute of Health Sciences (JIHS), adapted innovative curriculum in the 1980s. Considering the local context and social fabrics, JU's innovative curriculum was mainly practiced through community-based education strategy (Asefa 2000).

The community-based education takes learning out of the class-room to the community setting; through three different programs: community-based training program (CBTP), team training program (TTP), student research program (SRP). JU attempts to integrate training, research and service (Asefa 2000).

- **CBTP** It starts at the very early educational experience in the first year and continue regularly up to the final year/end of the training. Students are supposed to stay in communities for about four weeks per academic year. Groups of students are assigned to urban or rural communities. Students pass through a process of identifying site, developing study instruments, data collection, identifying and prioritizing problems, plan intervention and implement, and evaluate by involving the different stakeholders.

- **TTP** Different categories of JIHS students during their final year of studies are posted at health centers for about ten weeks in teams. The team activity includes community diagnosis of the catchment population of the health centers, then plan, implement, and evaluate by involving the community and the different sectors of development.

- **SRP** To enhance students' skill on problem identification and develop solutions, final year health science degree students carry out an independent community based and action oriented study project.

  All the three strategies use a research approach in real communities to grasp a complex problem by considering the physical, biological, social systems holistically. This is also an attempt to encourage an open-ended problem solving approach. This approach is being introduced in the different faculties at JU. The experience is also being shared by other sister universities in the country.

JU has also good experience with project work, professional attachments, and practicum all of which could be shift to incorporate the open-ended problem solving, complex learning approach.

But JU's attempt to make the class-room teaching an innovative one has not been successful. There is a need to learn from the international experience and move away from the traditional aspect of class-room teaching (Illinois Mathematics and Science Academy 2007, Maastricht University 2007, McMaster University 2007, The Higher Education Academy 2006).

In order to address the serious issues of education mentioned earlier, what should be the new approach?

In light of the above, it would be better to take the best pieces from each approach to create a curriculum that addresses the needs of society and different stakeholders.

The new learning strategy is, therefore, a 'hybrid' of the JU experience and the above mentioned different approaches of higher education abroad. The synergy that results from the hybrid is a new impetus for the learning process. Hence, the new approach to our setting will be an ***"Imaginative, Innovative and Creative Curriculum" (IICC)*** .The following ideas is liberally taken from the above mentioned sources.

Imaginative, innovative and creative are interlinked. Imagination generates ideas and possibilities. Imaginative means inventing new (creative), find new solutions to problems (innovation), They are one and three.

Innovation is changing. It looks for solutions to problems through creativity and adaptation.

Creativity is an essential capacity for working with complex and unpredictable learning situations such as those we encounter in our working and personal lives. It involves convergent and divergent thinking.

And adaptation is doing or producing things that have been done before but differently.

Convergent thinking is an approach for problems solving that have a particular, unique answer. It is focused or closed approach.

Divergent thinking is an approach, for generating alternatives, options and is open.

Again in view of the above context and principles a curriculum is conceptualized which could address the needs of the stakeholders.

Curriculum development is a process of creating a mechanism/design which facilitates the learning and teaching process to attain previously agreed upon goals.

Curriculum design needs to have a visual representation to reflect its overall interconnected parts/components. This conceptual framework/map gives an idea to stakeholders in a holistic manner. The following framework adapts the international experience to our situation (Diamond 1997, Asefa 2000, Biggs 2003, The Higher Education Academy 2006). IICC will comprise the following components: concept, philosophy, rationale; learning goals; content; learning and teaching process; assessment

and quality; and review. These components are determined by stakeholders' analysis and the principles to be followed in the making of the curriculum.

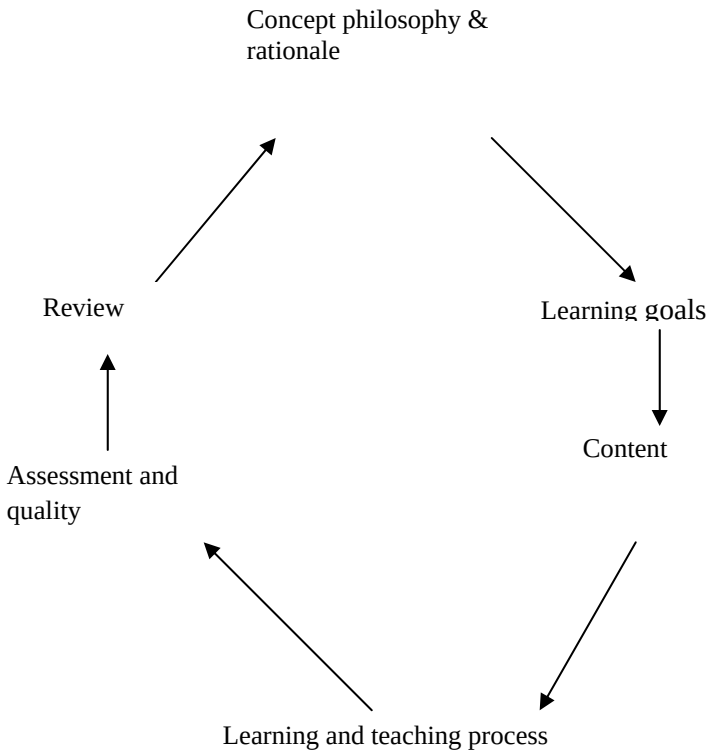

Figure 1: Imaginative, Innovative and Creative Curriculum (IICC)

This design could serve at multiple levels including institutional, program, discipline/course levels.

The interaction among parts/components and stakeholders ensure the curriculum is dynamic and responsive to stakeholder needs.

In line with this, we are adapting IICC that focuses on key skills: numerical, problem solving, team work, self-management, communication and IT across all disciplines and faculties. These are key skills for competitiveness and success, and for life long learning to all professions. We need to exploit the prevailing information technology to realize our

dreams (Diamond 1998, Biggs 20003, The Higher Education Academy 2006, McMaster University 2007, University of Maastricht 2007).

The core of the IICC is its enshrined principle for its preparation, which is guided by the interest of the different stakeholders based on hard evidence. Evidence produced through fair representation of the different stakeholders and the quality of data observed. Its making will be transparent and participatory. This is a guide that determines the function and the integration of the different components.

This is the means through which IICC is home-grown, dynamic and continues to meet the needs of society.

4. Learning goals

- Goals are part of an aspirational/expectational framework, directs attention to:
  - Promoting the general power of the mind
  - Promote imagination, innovation and creativity
  - Providing opportunities for adult life-time learning to enable individuals, employers and society as a whole to adapt to changing circumstances
  - Advancing learning and research
  - Promoting culture and standards in all aspects of society
  - Serving local and regional communities as well as national interests at home and abroad

5. Content

Course content preparation traditionally was almost the sole responsibility of universities. But in the new curriculum the approach is a trade-off and balance among the different stakeholders interest. Currently there is an explosion and better access of knowledge. Different partners of development, stakeholders are demanding their interest to be addressed in the course preparation.

Thus the course content should be flexible enough to accommodate the competing interests of stakeholders and adapting to changing circumstances.

And it should reflect the principle that learning should progress from relatively simple concepts and changes in behavior to the more complex as the student moves through the course in a spiral nature.

6. Learning and Teaching Process

The core part of imaginative, innovative and creative curriculum is the learning and teaching process. In this approach the student is responsible for his/her learning and the role of the teacher is to be a good facilitator and resource for students. The pedagogy is focused on wakening the imagination and engagement of students. The main purpose of higher education is complex learning. Teaching is to facilitate students' imagination for

complex learning. The teacher need to have the belief and confidence to encourage and engage for negotiated learning outcome.

The process need to be activity based that engages students in challenging, novel and unpredictable problem working and learning.

The learning process could include specific time-tabled sessions such as interactive lectures and seminars, workshops, laboratories, fieldworks. In this process, facilitators need to raise sensitive and careful questioning aimed at stimulating the new idea and generating ideas and lively discussions.

How does one get started on such imaginative approach? The starting point and stimulus for learning can be an intriguing problem, a case-study, a project, practicum attachment, enterprise attachment, or a community attachment. The facilitator might present situations where there are often many 'right' answers and the end result is not as important as the process through which it was uncovered by the students.

These sessions/activities should have the potential for nurturing learners' imagination/innovation/creativity. The power for innovation/creativity is the intellectual curiosity that is fired by imagination: the desire to find out, understand, explain, prove or disprove.

In this process learners are changed to be imaginative, creative, innovative, problem solving, originators, and to develop analytical, adaptative and communication skills.

These terms are indicators for the new approach which helps the learner to monitor his progress as s/he learns, makes changes and adapts his or her methods when under performing.

It is about self-reflection, self-responsibility and initiative, as well as goal setting and time management which are metacognitive and self-learning skills. Metacognition is knowing how to learn, self-management skills through convergent and divergent approaches.

If students understand the rules of the game they could better prepared to reflect their personal accounts of learning or portfolios. Portfolios describing and evidencing learning and the process of learning are central to metacognition. They encourage learners to recognize their own learning as it emerges. It is the means to illustrate that one has learned in the way indicated in the objectives.

Since the last two decades there is a global movement of imaginative curriculum, based on student centered learning in higher education. This is an approach, of the way forward for it suits pedagogically for stimulating complex learning. It is also necessary considering the increasing student/staff ratio, and varied background and abilities of learners. This is also the means to make learners immerse and engage in their subject domain. Thus, making the learner responsible for his/her learning. This is also a means for students to play a role in developing the learning outcomes in a negotiated manner with the different stakeholders. In the process the learner ***'learn how to learn'*** by identifying his strengths and gaps. This

also makes the learner ***'life-long learner'***. As learners become more skilled at using this method, they gain confidence and become more independent as learners.

Independence leads to ownership and learners realize they can pursue their own learning needs and discover to be a self-learner. Hence, the idea of ***'student centered learning'***.

The task of the facilitator is to acknowledge, cultivate, exploit and enhance the self-learning capabilities of all learners. It should be underscored the facilitator is as much a learner as the student.

To organize the learning process and to assess the learning performance/level of students, there is a need to classify learning from simpler to complex. To address this, Biggs 2003, classify learning into different levels which could facilitate higher order learning as follows.

- Declarative knowledge – knowledge one acquires by reading and what the teachers declare. Students understanding is assessed by their ability of declaring it back.
- Procedural knowledge - getting the sequences and actions right, it is skill based, knowing what to do when a given situation arises
- Conditional knowledge - involves declarative (the academic knowledge base), procedural knowledge (having the skills) and conditional knowledge (knowing the circumstances for using them).
- Functional knowledge - it involves declarative, procedural and conditional knowledge. This is a means to solve problems.
- Extended abstract - relating to existing principles so that unseen problems can be handled. Questing and going beyond existing principles.

This approach transforms our learning and teaching process. It clearly depicts the level of performance of the student. It helps to align learning process, outcome, and assessment. This is a means to make learning attain its intended goal.

In JU, during CBE, students learning process fairly follows this approach.

7. Assessment

There is a need to develop an in-built multifaceted tool that could be used to assess students, programs, and as well as disciplines/subjects that could give a feedback on the progression of the learning and teaching process. These should be aligned with the intended learning outcomes, and the learning and teaching process of the imaginative/new approach.

Criterion-referenced assessments (CRA), Biggs 2003, present, in aligned teaching, the components (learning/teaching activities, learning outcomes, assessment) support each other. CRA first sets clearly the learning outcomes to be achieved at the different levels of cognitive complexity. Then assessment will be against the earlier set criteria (learning

outcomes/ objectives/aims) developed through engagement and negotiation of stakeholders.

In general, assessment is a means to support students learning and should assess the learning experience. It should facilitate the search for innovation, and creativity be aligned with the achievement of the learning outcome.

A range of multiple formative and summative assessment methods are needed in order to address the range of abilities that are being developed. Portfolio could serve both as a reflection on the student's learning and as a means for formative self-assessment.

Evidence for assessment should be generated from the learning process in the different learning settings. The imagination, innovation or creativity will lead to different outputs which could form part of the assessment.

It must be emphasized that the assessment criteria should reflect the learning process that supports the achievement of the intended learning outcomes.

In the assessment criteria the following students' abilities need be included.

- idea generating capacities
- creative thinking to operate in complex and ambiguous settings
- imagination and originality
- activities that have the potential for nurturing students creativity, innovation, team/group work, project/assignment work, personal/ interpersonal development, skills/personal development planning and reflection, open-ended problem solving, self and peer assessment, and self-learning and confidence
- A sense of values, choices, responsibility, commitment, sacrifice ……. selfless

8. Quality

This is a continuation of the assessment. It is a process of change for improvement. This is all inclusive of different stakeholders: students, teachers, institution, policy makers, employers/consumers, and society voluntarily engage in quality improvement of higher education learning in order to address ever changing needs of society.

To realize this we use different mechanisms: in-built multifaceted assessment, external examination, collaborative benchmarking, certification/accreditation, and focused or overall review/research. Hence, the process creates culture that facilitates commitment to continuous improvement.

The main purposes of the quality improvement are to: (source)

- change in the way we teach and the learning and assessment methods we use
- continually renew the curriculum
- upgrade our professional knowledge and skills
- improve the broader educational, administrative and resource environments where learning and teaching take place

The process of quality improvement includes:

- evaluation of current situation, based on proper review/study
- creating the conditions for change
- implementing changes
- evaluate/study whether change has made something better
  Thus, live curriculum

9. Course/module design

Higher education learning comprises complex mixtures of knowledge, understanding, skills and broader capabilities that can be more or less demonstrated and assessed. It will also embody values, attitudes and behavior that are difficult to assess directly but which are an important part of a student's academic performance.

The higher education system is being encouraged to be more explicit about the nature of the learning that programs and subjects are intending to promote.

The course or the module team in the preparation of the course/module should consider the different stakeholders interest expressed, and should have to balance the subject, the student, the learning process, the teacher, the learning outcome; the needs of society and the making of the course/module unique and worthwhile. There is also a need to value imaginative approach, change, and to make it part of the assessment process.

An emphasis should be placed on learning for understanding rather than learning for extensive content mastery. There is evidence that an emphasis on coverage encourages superficiality. Superficiality is not conducive to imagination, innovation and creativity. Understanding, which comes from covering less ground with more emphasis on understanding concepts, strategies and assumptions encourage imagination, innovation and creativity. This may mean covering less material but doing so encourages students to understand more about the domain and its complex learning outcomes.

It is said the primary cultural domains in higher education are disciplinary or subject fields (Becher, 1989).

Currently there is an opportunity where disciplines and subjects could share new ideas, methods, and experiences on imaginative approach both locally and from higher education abroad with similar initiatives through web sources.

10. The different sections of curriculum design described above could serve as guiding principles to the different units/levels of universities to develop the respective curriculum at each level. This approach also could serve at secondary and primary levels of education.

11. Next Steps

11.1 Capacity building

a) Human:

The new concept (IICC), transforming learning requires an informed decision and commitment by the people who have institutional responsibility. They also need to develop and implement an institutional structure favorable to the new approach. This is bedrock for the progression of IICC. Such transformation has to be led by officers who have the conviction, inspiration and energy to the new challenge. Higher education leaders need to have a forum for discussion on imaginative curriculum, a new institutional culture, with the different stakeholders. This is a means for collective responsibility and to learn from each other.

IICC also requires positive attitudes and high level motivation evidenced by persistence and willingness to work hard from staff and students.

In order to realize the above there is a need for regular orientation and training on IICC through different means to all partners.

b) Learning environment, the following materials and facilities needs to be addressed.

- audio-visual, internet, computers, class-room, laboratories, libraries, projects, practicum/professional practice, community attachment and research/research centers

12. **Establishing a web site for the new approach**

New ideas and concepts take time both to reach and influence the intended audience/stakeholders. The internet has opened a new opportunity for enormous information on the various disciplines/subjects; better communication and a means to learn form each other. It seems, it is a better idea to use the online technology both for relatively wider access and to initiate lively discussion by involving the different stakeholders mentioned above. Stakeholders have social responsibilities to comment and enrich each section of this framework. Collectively, there is a need for concerted effort to permeate the new approach into higher education to address the earlier stated issues of higher education. Again there is an opportunity to share experience from online source of other higher educations abroad with imaginative, innovative and creative approaches. We need to exploit the prevailing information technology to maximize the dissemination of the new approach among all stakeholders.

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